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No. 1

THE PROBLEM OF NECK PAIN:

*Its alleviation by anterior removal of intervertebral
disc with interbody fusion in the cervical spine*

Robert A. Robinson, M. D.

Baltimore, Maryland

Introduction

Discomfort in the cervical spine, as in the lumbar spine, can be divided clinically into two broad categories,—that associated with neural tissue compression with discomfort extending into the relevant extremities and that without neural tissue compression but with referred type pain often extending into the relevant extremities.

Dr. Robinson is professor of orthopedic surgery, Johns Hopkins University School of Medicine, Baltimore, Maryland.

This manuscript was presented to the eleventh annual scientific meeting of American College of Surgeons at Point Clear, Alabama on February 8, 1963.

Disc Protrusion

In the case of low back and leg pain not all patients have protrusion of nuclear material from the center of the intervertebral disc into the spinal canal or into the intervertebral foramen. However, the majority of patients with true sciatica have such intervertebral disc protrusions. Although intervertebral disc protrusion may occur in the cervical spine, it is not nearly as frequent as in the lumbar area. Nevertheless they do occur, often suddenly, and they are frequently characterized by unremitting arm pain.^{12,24} When such a protrusion of nuclear material into the spinal canal occurs in the neck, either nerve root compression with a postero-lateral protrusion, or cord compression with a central

THE PROBLEM OF NECK PAIN

TABLE 1

Difference Between C-Spine and L-Spine Disc Protrusion

<i>In the Cervical Spine</i>	<i>In the Lumbar Spine</i>
1. Disc protrusion rare.	1. Disc protrusion common.
2. Sizeable disc protrusion cannot very well occur without nerve root and/or cord pressure because of the tight space restrictions in the cervical spine.	2. Rather sizeable disc protrusion can occur without nerve root pressure particularly at L-5 S-1.
3. The spinal cord can be involved in the neck at any level.	3. The spinal cord ends at L-1 and therefore cannot be involved by a lower lumbar disc protrusion.
4. Osteoarthritis in the neck in association with disc degeneration and bony spurs, due to a tight space situation is more often associated with nerve root irritation and even compression than are disc protrusions.	4. Osteoarthritis although common enough in association with disc degeneration in the low back does not usually, via spurs, due to the free space situation, cause nerve root irritation or pressure; usually only referred-type pain or acute "catches" with a following episode of pain in the low back result from such osteoarthritis.

protrusion, is almost certain to follow due to the tight space situation. In the lumbar spine, due to a less tight space situation, nerve root compression is not always present even when a large nuclear protrusion occurs. Also, since the spinal cord usually ends at L-1, disc protrusions in the lower lumbar region don't cause spinal cord compression (See Table 1). In this latter situation referred pain extending into the leg may arise from disc protrusions without nerve root compression.

Cervical Nerve Root Compression

In the cervical spine, it is the more common practice at present to decompress any definite nerve root compression via a posterior approach,²⁰ Fig. 1, 2, 3, removing that part of the **back wall** (lamina and ligamentum flavum) and **postero-lateral wall** (medial portion or all of the facet joint) of the bony spinal canal necessary to relieve pressure on a nerve root. Postero-lateral disc protrusions have a typical myelographic appearance (Fig. 1 & 2). Usually, one simply decompresses the nerve root although in some in-



Figure 1. Lateral cervical myelogram: Postero-lateral disc protrusion.

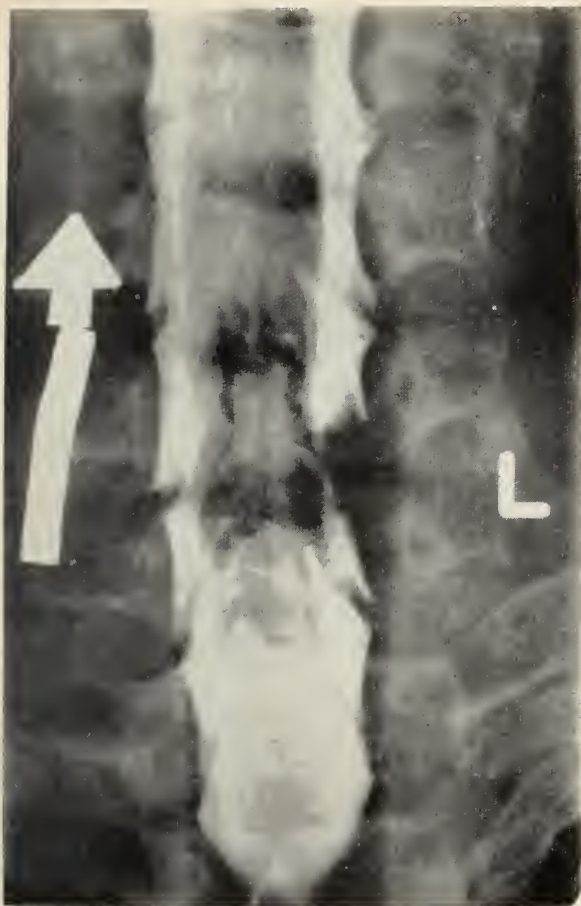


Figure 2. A-P Cervical Myelogram: Same patient as in Figure 1.

stances the disc material is so protruded into the spinal canal that it can be removed without damage to the spinal cord. If referred pain or even residual nerve root pressure is present following such a procedure, particularly if during such a procedure a facet joint is removed, then I think that anterior disc removal and fusion is indicated. In the lumbar spine of course one moves the nerve roots aside with relative impunity and removes any disc material that may have protruded into the lumbar canal as well as any detached fragments of disc that may remain in the intervertebral space from which the cartilage protrusion occurred.

Central Cord Compression

Decompression of the spinal cord in the neck due to a central protrusion of disc material presents a more technically difficult surgical problem than nerve root decompression. (Fig. 4, 5, 6.) This also presents a characteristic myelographic appearance.

Compression of the cord by a disc protruded but **confined** and only bulging (not **actively protruding**) under the posterior longitudinal ligament can sometimes be relieved adequately by a posterior decompression. This may involve opening of the dura and cutting the dentate ligaments. This same routine, namely the removal of a lamina or two, and ligamentum flavum and cutting of the dentates is also used in those instances in which posterior bony spurs arising posteriorly along the edges of vertebral bodies that are adjacent to a degenerate intervertebral disc

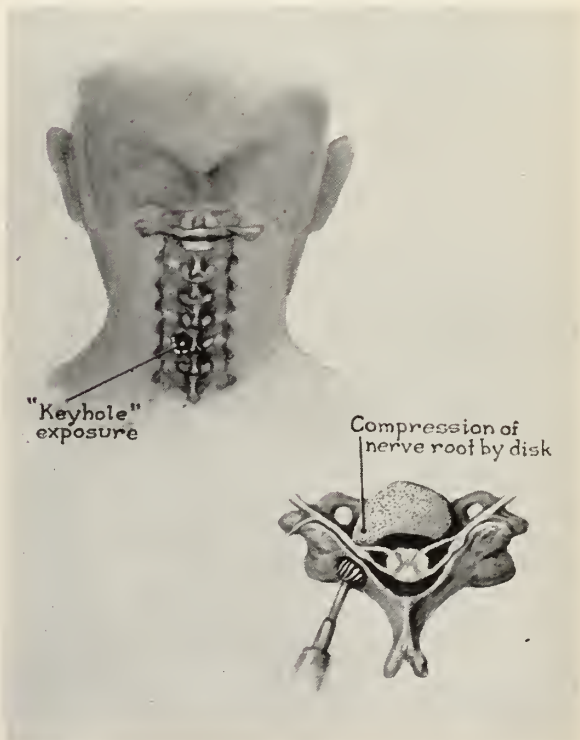


Figure 3. Partial laminectomy approach used by Dr. Scoville²⁰ for postero-lateral disc protrusion decompression (used by courtesy of the authors¹⁷ and the C. V. Mosby Company Publ. St. Louis)

cause central compression of a spinal cord (Fig. 7 & 8). A bony spur also gives a rather characteristic myelographic pattern (Fig. 8c). In the case of a posterior central bony spur or a confined central disc bulge this posterior decompression procedure may be a satisfactory therapeutic solution in itself. However, this procedure does not in itself:—(a) prevent further disc protrusion which may compromise the result even at a later time, (b) obviate a forward flexion of the neck,—a “swan neck deformity”—following extensive laminectomy, and (c) in the case of large central protruding bony spurs, either prevent

these spurs from becoming larger, or stop their motion in the vicinity of the cord and nerve roots. These three complicating sequelae may require fusion of the cervical spine for relief of pain and even for relief of subsequent increasing compression and compromise of cord function.

Compression of the spinal cord by a disc **actively protruding** in the mid-line through the posterior longitudinal ligament at the time of surgery presents a more threatening and difficult therapeutic situation. The situation is dynamic and not only is it technically difficult to isolate and cut the dentate ligaments in this circumstance but once cut the operator is aware that the cord is still being dynamically compressed. The nerve roots will not let it be relieved of the active compression that is attacking it from the front of the spinal canal. The operator is tempted as

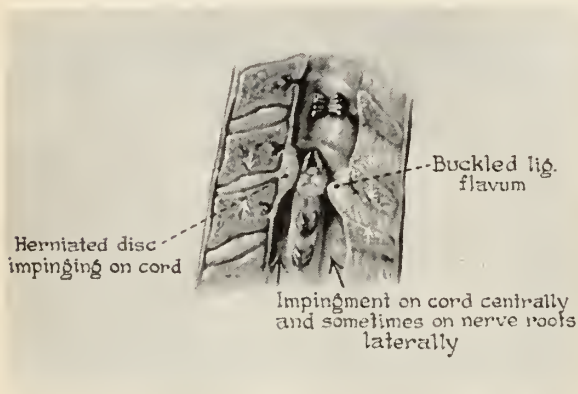


Figure 4. Diagram of disc herniation of the central type into the cervical canal.



Figure 5. Lateral cervical myelogram: Central disc protrusion.



Figure 6. A-P cervical myelogram: Same patient as in Figure 5.

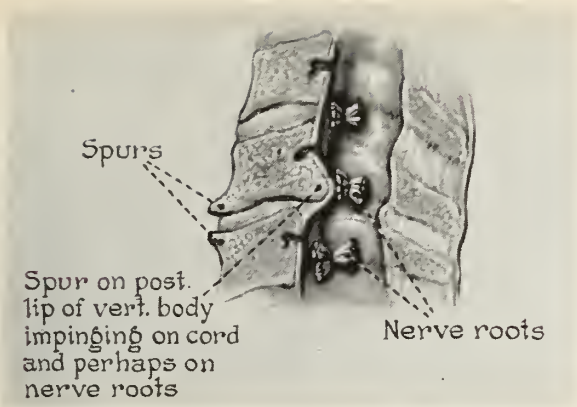


Figure 7. Diagram of in-situ disc degeneration. The narrowed intervertebral space and the bony spurs are noted. Also note the posterior buckling of the ligamentum flavum and dura which occurs with excessive cervical lordosis as well as with narrowing of the intervertebral space whether that narrowing is due to disc protrusion (Fig. 4) or disc degeneration in-situ. The buckling of the ligamentum flavum and dura adds to the narrowing of the A-P diameter of the spinal canal already present due to bony spurs or protruded disc material.

he might quite safely do in the case of some protruding postero-lateral cervical discs to proceed through the dura to one side of the cord and see if the centrally protruding disc material can't be extracted around the side of the cord. However, in this situation it may be safer to close the posterior wound after dentate section and then or later decompress such an actively centrally protruding disc from the anterior approach through the involved disc space.² Fortunately, the discs in the neck when they protrude usually do so directly behind the disc space (Fig. 1, 2, and 5, 6) and do not tend to dissect under the posterior longitudinal ligament superiorly or inferiorly from their point of exit from the disc space so that the operator having proceeded through the disc space has a reasonable chance of finding the disc protrusion immediately posterior to the disc space. Thus by proceeding cautiously the protruded cartilage can be drawn back through the intervertebral space: and thus without retraction of the spinal cord it may be decompressed.² This procedure when technically feasible may be better for the spinal cord from the physiologic standpoint than attempts to remove

such central disc protrusions around the cord from the posterior approach.

After such an anterior decompression of an intervertebral disc bone should in my opinion be placed in the exenterated disc space for stabilization of this intervertebral level which has become, by disc removal, mechanically abnormal¹⁶ (Fig. 9).

Disc Lesions Causing Referred Pain

On the other hand, if degeneration of a cervical intervertebral disc occurs in situ, neck, shoulder and arm pain may follow without nervous tissue compression just as low back, buttock and leg pain may occur in the low back with such disc disease. In situ disc degeneration may occur at any intervertebral level in the spine. It leads to disc space narrowing and to abnormal mechanics at the involved intervertebral level of spine motion. Disc narrowing and abnormal mechanics also follow a disc protrusion. Both disc degeneration in situ and disc protrusion from the disc space result in the same situation: lack of a functional disc between the vertebral bodies. For treatment of the general mechanical imperfection and discomfort that **may** follow loss of disc function, either due to disc protrusion or disc degeneration in situ, fusion is considered the operation of choice. Loss of a facet joint at the time of posterior nerve root decompression may add to the problem of abnormal intervertebral mechanics requiring fusion.

In these instances of intervertebral mechanical imperfection, a variety of discomforts both paraesthesias and pain, may appear which are different than those which arise from compression of a nerve root or the spinal cord. (See Table 2).^{*} However, such referred pain may mimic the distribution of pain due to nerve root compression: for instance if referred pain stems from the C5-6 intervertebral level then discomfort may be

* See Reference 18 for a more comprehensive listing of these paraesthesias and pains.

Figure 8. Four lateral X-rays of one patient's cervical spine demonstrate four points:



A. In 1950 the disc space appeared quite normal. If a flexion film in the lateral projection had been made then, perhaps more narrowing would have been observed at the C5-6 interspace than at the other intervertebral levels. In 1950 the patient had neck, shoulder, arm, and hand discomfort with tingling in the thumb and index finger. The "pain" was then intermittent.

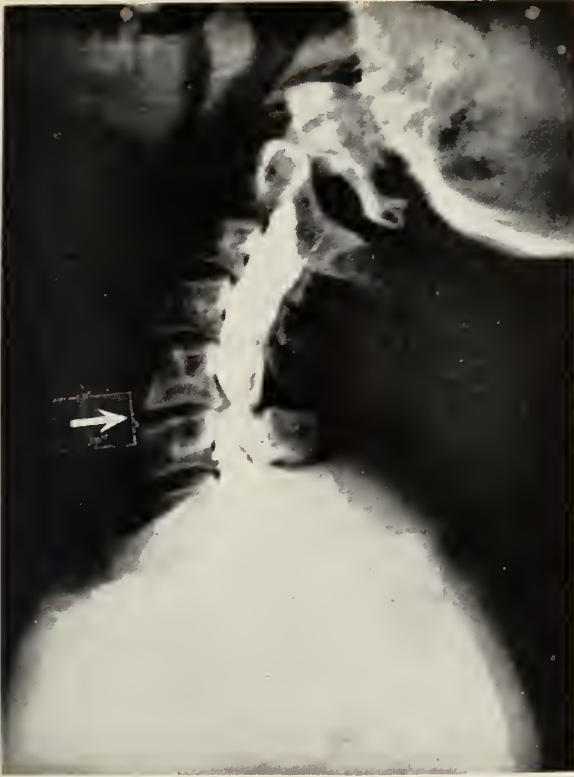
felt in the thumb and index finger and when from C6-7 the discomfort may be felt in the outer two or three fingers of the hand. The complaint is of burning, tingling, clumsiness and "numbness" although touch and pin-prick tests may be normal. Therefore, although the quality of the discomfort associated with referred pain may be different the distribution pattern may be suggestive of nerve root compression.

However, decompression of a nerve root in such clinical situations of referred pain is not usually the therapeutic answer since it does not strike at the heart of the pathologic mechanism: namely, an abnormal intervertebral disc with mechanical disturbances which at least initially give a referred pain syndrome rather than a nerve root or a cord compression syndrome.



B. In 1955 the disc space had visibly narrowed and bony spurs had appeared anteriorly and posteriorly. (Spurs had also appeared in the joint of Lushka region on oblique X-ray views of the cervical spine.)

The innervation of the capsular and ligamentous structures around joints in the spine, as about peripheral joints, is afforded by a system of unmyelinated nerve fibrils with simple nerve endings. In the case of the intervertebral disc regions these nerve endings lie in the outer layers of the annulus and in the longitudinal ligaments.^{3,11,13,14,19,23,25,27} These nerve endings are believed to be the ones which can, when strongly stimulated by a mechanical abnormality at an intervertebral level, be referred so that abnormal uncomfortable sensations are perceived by the central nervous system. The localization of such pain or paresthesias may be distant from the affected structure. Irritation of these deep somatic nerve endings send stimuli to the central nervous system which in turn often refers them to a region of skin representation. For instance, from the capsule surrounding an arthritic facet joint or the annulus about



C. In 1956 the myelogram showed the typical appearance of a defect caused by a bony spur. The column of contrast media follows the spur outline but the cartilage cap and posterior longitudinal ligament separate the "dye" column from the bone contour. This appearance contrasts with that seen in Figures 1 and 5.

Note that a partial laminectomy had been carried out between 1955 and 1956 as demonstrated by the alterations in the posterior spinous processes of C5, 6 and 7. The referred type of pain had not been relieved by the posterior cervical spine surgery.

an intervertebral space in the cervical spine, in which the disc has become degenerate, such stimuli may give pain or paresthesias in the shoulder, the interscapular region, the arm and the hand, occipital, head, facial and temporal discomfort and discomfort behind the eyeball may apparently be associated with this disease.^{9,15} The reflexes in these areas of referral may be slightly increased or slightly decreased. Changes in sensation may occur, but they are partial and hyperesthesia as well as mild hyposthesia may be observed. The outlines of these areas of sensory change are relatively vague and not as sharply demarcated as in the case of nerve root or



D. In 1957 the spine had become solidly fused at C5-6 secondary to an operation performed in 1956 and diagrammed in Figure 9. The radiating discomfort into the hands had apparently disappeared after the 1956 operation. (Figure 8 is used through the courtesy of the authors²² and the *Journal of Bone and Joint Surgery*.)

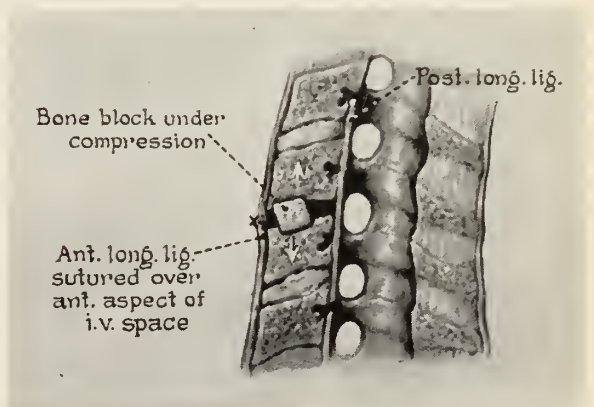


Figure 9. Diagram of operation used in Figure 8D. Some slight refinements of the procedure (see Figure 13) has evolved but the basic procedure remains unchanged since the author and Dr. George Smith¹⁶ operated the first patient in February, 1954.

peripheral nerve lesions. Unlike the situation secondary to significant nerve root compression, girth of muscles in the area of pain referral are not altered at all or are very slightly reduced from moderate disuse. Muscle spasm in the trapezii and fasciculations in

THE PROBLEM OF NECK PAIN

TABLE 2

Physical Changes Associated With:	Nerve Root Compression	Excessive Stimulation of Deep Somatic Innervation.	Cord Compression Due to Posterior Ridging of Vertebral Bodies in Neck or Disc Protrusion
Motor	1. Loss of muscle girth.	1. No significant loss of muscle girth.	1. Occasional loss of muscle girth if severe.
Reflex	2. Weakness: objective 3. Decreased to point of loss.	2. Weakness: subjective 3. Decreased generally but occasionally increased. (Occasionally see muscle fasciculations in upper extremity.)	2. Weakness: may be worse in arms than legs. 3. Hyperreflexia below level of lesion. Positive Babinski. Lhermitte's sign. ¹⁰
Sensory	4. Nerve tenderness, usually severe. 5. Hypoaesthesia to complete loss of sensation with sharp outline of skin area involved. 6. Pain is unremitting even with immobilization particularly if a disc is actively protruding or the intervertebral foramen spurs are very large so that the neural tissue cannot accommodate to them under any circumstances.	4. Some nerve tenderness usually mild. 5. Hypoaesthesia or hyperaesthesia but with vague outline of skin area involved. 6. Paresthesias and pain usually relieved by immobilization. "Burning" "Tingling" "Numbness" without much loss to pinprick.	4. Backache or flankache and sensation that "legs don't belong." (No ocular or speech defect unlike multiple sclerosis.) 5. Scattered sensory loss below level of lesion.

the upper arms instead of gross weakness may occur.

In a patient with either cervical spine, neck and arm; or lumbar spine, buttock and leg pain, stemming from the spine, there may be a mixing of nerve root compression discomfort and discomfort due to excessive stimulation of the deep somatic nerve endings, but in general I find the division of patient's problems into the nerve root syndrome and the deep somatic nerve stimulation syndrome (or referred pain syndrome) very useful for diagnostic, prognostic and therapeutic purposes.

Clearly Defined Intervertebral Levels of Abnormal Mechanics Causing Referred Pain

Referred pain or pain from deep somatic innervation may arise from very clearly defined lesions at one level of the cervical spine. In some cases, there is no objective evidence of nerve root compression or cord compression, associated with these clearly defined lesions. Instead, these patients complain of discomfort radiating to the shoulders, up the back of the head, into the arms, and to the fingers, from the neck. They usually have muscle spasm in the neck. In such cases, the site of the cervical spine abnormality is usually exactly localized to one intervertebral level of motion of the neck (Fig. 10). Fusion, either posterior or anterior or both, of the

offending level of abnormal intervertebral mechanics brings relief. **Primarily** such cases demonstrate the fact that this type of referred pain **can** arise from a level of mechanical imperfection in the neck without nerve root or cord compression; and **secondly** that fusion, when the level of mechanical imperfection can be sharply delineated, **is** effective in relieving this type of referred pain, arising we believe from excessive stimuli of deep somatic nerve endings.

Less Clearly Defined Intervertebral Levels of Abnormal Mechanics Causing Referred Pain

The problem is that such referred pain and muscle spasm may also arise from levels of the cervical spine in which one can't localize the lesion so precisely. When one tackles the problem of the degenerate disc, or the injured disc mechanism, as a cause of referred pain one finds that about half the time physical exam, history and plain X-rays combine neatly to locate the level of trouble. But in the other half it is not quite so easy to locate that intervertebral level of motion which is involved. Some obvious reasons for this difficulty are: (a) several of the discs may be degenerated particularly in older patients (Fig. 11). If one "fixes" the one level that appears most troublesome, other degenerate levels may continue to give some trouble; (b) the plain X-rays may fail to show that level which is actually causing trouble, for by X-ray several intervertebral levels may show bony spurs and disc narrowing; or (c) plain X-rays may show no trouble at any intervertebral level and the disc pathology can only be demonstrated by discogram^{3,21,18,22} (Fig. 12). In such clinical problems special dynamic plain X-ray examination, e.g. upright lateral views at the limits of flexion and extension, discography, myelography, and cineradiography may be employed in order to try to locate the culpable level among several that show some evidence of disc degeneration on plain X-ray examination.

Figure 10. Four X-rays of one patient demonstrating four points:



A. X-ray of cervical spine showing one distinct level of abnormal intervertebral mechanics. Five months before this picture was made the patient suffered a flexion injury of the neck. He had spasm of neck muscles, pain in the neck and occiput, aching in the shoulders and arms but no evidence of nerve root or cord compression. He was placed in a Minerva jacket for three months in head-neck extension. Following removal of the jacket the discomfort all gradually returned and increased in severity over an eight-week period. This view was taken with the patient upright eight weeks after removal of the Minerva jacket.

The Pathology of Degenerate Disc Disease Without Disc Protrusion

The morphologic pathology of disc degeneration must be reviewed to understand discograms. The pathology of degeneration in intervertebral discs is perhaps best demonstrated by histologic sections of the cervical spine which show the difference between normal disc spaces in the infant and multiple degenerate ones from an old adult. Degenerated discs usually have a cleavage plane passing transversely (i.e. horizontally) through the disc with or without rupture of

Figure 10



B. After an hour of relaxation with the head in extension over the end of a mattress without anaesthesia, or with anaesthesia as in this picture, the deformity was reduced but not completely. It was subsequently found that more complete reduction was obtained only when the anterior longitudinal ligament was cut transversely and the degenerated disc material and anterior annulus were removed.

the annulus fibrosus at some point along the perimeter of the degenerate disc. Thus instead of one vertebral body rolling about on the one below with a turgid, hydroelastic disc nucleus keeping the annulus fibrosus on an even tension between the two bodies, the disc nucleus is dried up and cracked transversely; the annulus becomes contracted and warped; and the vertebral bodies do not move in a normal rolling fashion on one another.

In general this type of pathology, namely loss of cartilage in the center of a joint with bony proliferation at the periphery, is typical of osteoarthritis.^{4,6,7} The bony proliferation at the edge of the bones forming a joint or

Figure 10



C. A posterior fusion was performed following the X-ray shown in Figure 10B, and the result two weeks after that fusion is seen here. The pre-op position was maintained but reduction was not complete.

osteoarthritic spur formation, is preceded by a fibro-cartilaginous outgrowth. These bony spurs may appear at any point around the periphery of a joint in which the cartilage is degenerate and thus they may appear at any point around the circumference of a degenerate intervertebral space:—for instance on the back of the cervical vertebral body, or in that arc of a vertebral body's circumference lying opposite a neuroforamina postero-laterally, or laterally opposite the vertebral artery, or anteriorly behind the esophagus. Occasionally, they interfere with cord or nerve root function but usually they are not big enough to interfere with such function. In this context it should be noted that due to their fibro-cartilaginous growth cap, spurs are almost always larger than they appear by X-ray. If a spur, including its cartilaginous

Figure 10



D. Two weeks after the posterior fusion an anterior fusion was performed. The alignment of C5 on C6 was thereby improved. Six months after that second operation this X-ray was taken. Solid fusion was observed on stressed bending films of the cervical spine in two planes. The patient's neck, head, shoulder, and arm discomfort were completely relieved. Actually the pain disappeared with the stability gained after the first operation but anatomy was nearly returned to normal by the second procedure.

COMMENT: This patient had referred type pain from one isolated level of mechanical imperfection in the neck. He was relieved of all symptoms when that intervertebral level of motion was eradicated by fusion.

cap, is very large, it may press on the spinal cord or a nerve root and thus mimic the physical findings of a protruded nucleus pulposus that presses on the cord²⁶ or nerve root, or cause referred pain from irritating the dura and nerve sheaths, since such structures like joint capsule have deep somatic innervation. If they extend far laterally, osteoarthritic



Figure 11. A lateral view of a cervical spine showing multiple levels of disc degeneration. No operation was performed since there were no nerve root compression nor cord compression signs; all intervertebral levels of motion in the cervical spine were involved; and the patient preferred to control his discomfort when particularly troublesome by a neck brace and mild head-neck traction rather than lose all neck motion by a panarthrodesis of the cervical spine.

spurs may sufficiently interfere with the vertebral artery,^{7,9} or if they extend anteriorly they occasionally cause problems in swallowing.⁸ The mechanics of an intervertebral level of motion may of course be primarily altered by facet joint injury or after some time disc degeneration results in secondary facet joint changes. There is also the possibility of a chemical irritant exuding from the cleavage plane in the degenerate nucleus pulposus, produced by the cartilage cells still living there, (e.g. chondroitin sulphate) that might leak out through a tear in the annulus and chemically irritate a nerve root; this possibility has not achieved the status of a probability but from histologic studies it is a possibility.



Figure 12A. Occasionally pain stemming from the neck is not relieved satisfactorily by external immobilization methods, or the patient cannot wear a brace for a long treatment period and continue in his job. In such circumstances plain X-ray films may fail to delineate the site of disc pathology and a discogram becomes important. This A-P view of the cervical spine shows the needles in place at the suspected levels of disc degeneration. An attempt to inject 50 per cent hypaque into each one of the three has been made. The C 6-7 level was defective as demonstrated by the cleavage plane through the left half of the disc observed here. Furthermore a tear in the left postero-lateral part of the annulus fibrosus allowed the contrast medium to flow out of the disc space posteriorly (See figure 12B) as well as laterally as demonstrated here.

Immobilization for Relief of Referred Pain from a Level of Intervertebral Abnormality

In most people who have the problem of neck, occipital, shoulder and arm pain from excessive deep somatic nerve end stimulation, secondary to disc degeneration, putting the neck at rest will usually relieve or at least partly relieve their symptoms. It has been observed that in the early stages of such osteoarthritic disc and joint degeneration intermittent traction and exercise may relieve pain. As far as I know such treatment is symptomatic and does nothing to correct the cartilage degeneration even in the early



Figure 12B. A lateral view of the discogram shown in Figure 12A. The contrast media flows through the annulus fibrosus and up and down under the posterior longitudinal ligament.

stages of the disc degeneration. At present I don't know how to stop the long-term progressive degeneration of the nuclear cartilage in an intervertebral disc once this process has begun. Later in the disease, however, if the pain persists, such manipulations may only increase the discomfort in the neck, shoulders, occipital region, arms and hands. When this later stage of the disease is reached and if immobilization gives some relief then it seems to follow that, if the level of intervertebral degeneration from which pain is arising can be exactly localized, then by fusion of that level the pain might be relieved!

Anterior Disc Removal and Intervertebral Fusion for Degenerative Cervical Disc Disease

One method of putting the spine at rest at any intervertebral level from the skull to the sacrum is posterior fusion. However, when one wishes to put an intervertebral level at rest and decompress the disc space at the same time, the anterior approach may be used (Fig. 13). In general, we feel that the morbidity and the pain in the postoperative

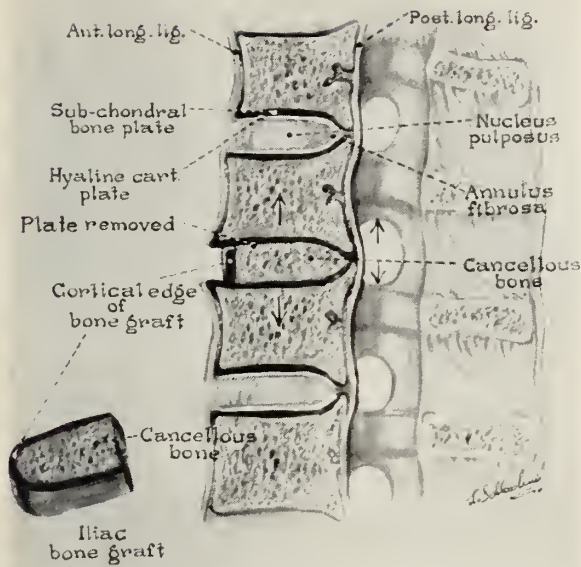


Figure 13. The present method by which we do an anterior interbody fusion is illustrated here. If a vertebral body must be replaced for one of several reasons the block is made larger and simply spans the space from the body above to the vertebral body below the deficient vertebral level.

(Courtesy of the authors¹⁸ and permission of the *Journal of Bone and Joint Surgery*).

period is less when one uses the anterior approach for intervertebral fusion in the cervical spine, than when one uses the posterior approach. Also this approach allows us to study the degenerate disc at the time of surgery. Therefore, for degenerative disc disease we now prefer the anterior approach. We have, between February 1954 and February 1963, operated on about 190 disc spaces in 102 patients by the anterior approach for non-neoplastic lesions of the cervical spine associated with neck, shoulder and arm pain. Three methods of anterior fusion have been described in the past 10 years.^{1,2,5,16} Our method of performing this procedure was first described in 1955 and again in 1958, 1960 and 1962.^{16,17,18,22} A study of results on the first 56 patients and our present operative method has been recently published in the December 1962 issue of the *Journal of Bone and Joint*

Surgery.¹⁸ In general when one disc level is degenerated and the others are apparently normal, excellent or very good results are obtained by about 90 per cent of patients treated this way. When two disc levels are involved only about 75 per cent of the patients have excellent or very good results; while in those instances when three or more disc spaces contain degenerate discs and three of these spaces are cleaned out and fused, excellent or good results are only obtained by about half of these patients. (Tables 3, 4, 5 and 6.) Our

Table 3

COMPLAINTS BEFORE OPERATION AND AT FOLLOW-UP

	Before Operation	At Follow-up
Pain		
Neck	45	16
Head	29	12
Scapula	37	3
Shoulder	36	10
Arm	28	7
Hand	45	4
Weakness		
Arm	28	5

Table 4

PREVIOUS FORMS OF THERAPY

Therapy	No. of Procedures
Traction	35
Collars and head-neck braces	52
Surgery	
Cervical spine	
Laminectomy	13
Foraminotomy	6
Posterior fusion	3
Other	
Removal of lumbar intervertebral disc	6
Scalenotomy	2
Fusion of the thoracic spine	1

Table 5

RELATIONSHIP OF RESULT TO NUMBER OF DEGENERATED INTERSPACES GRAFTED

No. of Interspaces Grafted	Result at Follow-up *			
	Excellent	Good	Fair	Poor
One	9	8	1	
Two	12	3	5	1
Three or more	4	4	6	2
Totals	25	15	12	3

* Based on fifty-five patients (one patient died in a plane crash before follow-up evaluation)

Table 6

Follow-up Result	Whole Group	Percentage of Fifty-five Patients Evaluated
Excellent	25	45.5
Good	15	27.2
Fair	12	21.8
Poor	3	5.5
Not evaluated	1	
Total	56	100.00

(Tables 3, 4, and 6—used by the courtesy of the authors (reference 18) and the permission of the *Journal of Bone and Joint Surgery*.)

present clinical investigative efforts are directed toward the development of those diagnostic techniques which will allow us to more exactly locate the referred pain sources in cervical spines so that fusion may be applied more exactly and a higher percentage of patients will have pain relief from this procedure.

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RETROPUBIC PROSTATECTOMY

An Evaluation of 500 Consecutive Cases

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This subject was chosen because of the author's personal experience with five hundred cases on whom retropubic prostatectomy was performed. Thirty-nine patients in this series had radical retropubic prostatectomy.

My personal opinion is that retropubic prostatectomy is the procedure of choice in cases of benign prostatic hypertrophy in which the gland is estimated to weigh fifty grams or more. Glands that are estimated to weigh less than fifty grams, as a general rule, have been removed by transurethral resection. If a patient presents himself with symptoms of prostatism, and on rectal examination he is found to have a gland estimated to weigh fifty grams or more, a retropubic prostatectomy is done.

Patients with large glands, which obviously

are producing marked obstructive symptoms, are usually not cystoscoped. Patients with small obstructing glands are usually cystoscoped. In all cases a complete blood count, urinalysis, chest and abdomen X-rays are done. In most instances a BUN is obtained. If there is any doubt about upper urinary tract pathology, an intravenous pyelogram is done if the BUN is not elevated. An electrocardiogram and urine culture are done if indicated.

One may wonder why this procedure was done on one hundred and ninety-one cases in which the adenoma weighed less than fifty grams. There are three reasons. First, the size of the gland is often misjudged and at surgery a large gland is found to consist of a small adenoma and a very thick capsule. Second, if the patient has had recurrent bouts of acute prostatitis there will be less likelihood of further infection after an enucleation. Third, in the younger age group (50-60) whose life expectancy is usually longer there is much less likelihood of further trouble with prostatic obstruction, following a retropubic prostatectomy.

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Figure No. 1

Age Incidence in this Series

Under 60	48
Between 60-70	233
Between 70-80	174
Between 80-90	42
Over 90	3
Total	500

The youngest patient was forty-eight years of age.

The oldest white male was ninety-one years of age.

The oldest colored male was ninety-six years of age.

Figure No. 2

Weight of Adenomata Removed

5-20 grams	34
20-50 grams	157
50-100 grams	227
100-150 grams	63
150-200 grams	14
Over 200 grams	5
Total	500

Figure No. 3

No Transfusions	60
500 CC's	369
1000 CC's	68
1500 CC's	2
2000 CC's	1
Total	500

Since Change In Technique:

Transfusions 9

No Transfusions 24

72.7% Required No

Transfusions

Number of Transfusions Given

Many of the first cases in this series received multiple transfusions. As experience was gained, less blood had to be given. Most of these cases, however, did receive one pint of blood during the procedure. One difference between retropubic prostatectomy and other types of prostatectomy is that most of the blood the patient loses is visible to the operator in the suction bottle. Transfusion reactions, if they occurred, were not recog-

nized. Practically all transfusions were given when the patient was under anesthesia and some minor reactions may have gone unrecognized. Blood loss was estimated by measuring the amount aspirated by suction and amount absorbed by packs and sponges. If the patient should lose approximately four hundred cc's of blood, a transfusion was usually given. Most of these old, dehydrated, persons do not tolerate the loss of three or four hundred cc's of blood well.

ANESTHESIA

Until the last two years most of these patients were anesthetized with sodium pentothal and nitrous oxide. In the past two years, most of them have received spinal anesthesia. Spinal anesthesia is the anesthetic of choice.

BLADDER SPASM

Bladder spasm is a definite problem in some cases. Some cases have severe spasm and others practically none. As a general rule, this has usually disappeared by the third postoperative day. The most effective drug found to control bladder spasm is Robanul® injectable. Unfortunately, this drug is not available for general use by injection. Murel®, Pathilon® and Probanthine® have been used with fair results. The side effects of Probanthine® have been rather annoying. In one instance Probanthine® contributed to acute gastric dilatation. Thorazine® and Sparine® have been helpful in controlling bladder spasm. A catheter is not irrigated unless it is thought to be clogged. Frequent irrigations accentuate bladder spasm.

Figure No. 4

Operating Time

Less than 1 hour	15
1 hour—1½ hour	207
1½ hour—2 hours	190
Over 2 hours	88
Total	500

The operative time includes cases that had herniorrhaphy and other incidental procedures.

Figure No. 5

Complications

Shock	5
Myocardial Infarction	6
Azotemia	4
Pulmonary Embolus	1
Epididymitis	2
Acute Urinary Retention	
After Removing Catheter	2
Thrombophlebitis	4
Septicemia	1
Osteitis Pubis	9
Stricture: Meatal	10
Urethral	2
Suprapubic Leakage	23
Bladder Spasm: Severe	14
Dilatation of Stomach	2
Stress Incontinence	18
Fecal Impaction	3
Paralytic Ileus	4
Rectovesical Fistula	1

OSTEITIS PUBIS

Four cases of osteitis pubis occurred in the first thirteen cases. After this, a vertical incision was made in the capsule. A transverse capsular incision usually resulted in more trauma to the pubic bone. The bone is pricked inadvertently with the needle when closing. In the five remaining cases three had herniorrhaphies with sutures in the periosteum of the pubic bone.

Figure No. 6

Causes of Postoperative Deaths

Myocardial Infarction	5
Pulmonary Embolus	1
Uremia	1
Uremia & Septicemia	1
Acute Gastric Dilatation	2
Total	10
Mortality 2%	

TECHNIQUE

The technique has been revised and is associated with much less bleeding. The technique that we use is a modified transvesicocapsular prostatectomy. The abdomen is prepped and draped and a low midline in-

cision is made between the symphysis pubis and the umbilicus. This is carried through the abdominal wall and the space of Retzius is entered. The fat adhering to the anterior surface of the prostatic capsule is very gently removed by blunt dissection. The importance of careful dissection is stressed because there are veins in this fat and if they are broken and retract under the pubic bone bleeding can be rather brisk and very hard to control. In one instance this happened and the patient had to be transfused with 1500 cc's of blood before the enucleation of the gland. If there are large vessels in the fat they are usually tied off or fulgurated. The regions of the internal iliac vessels are explored by palpation to see if there are any lymph nodes. After cleaning the capsule a suture of zero chromic catgut is placed through the prostatic capsule as far down toward the apex as possible. The purpose in putting this suture in is two fold. First, it ligates vessels that course through the prostatic capsule, and helps control hemorrhage. Second, it prevents tearing of the incision into the sphincter area. A small vertical incision is then made just above the prostatic vesical junction. The bladder is emptied of its urine by suction. The incision is then elongated across the prostato-vesical junction and into the prostatic capsule for sufficient length to obtain good exposure. Vessels which are cut in the prostatic capsule and the bladder wall are fulgurated.

The bladder is then thoroughly inspected. The ureteral orifices are identified. A transverse incision is then made across the apex of the trigone over the middle lobe. The mucous membrane on the cephalad lip of this incision is then grasped with a Babcock clamp. Long curved scissors are inserted through this opening and by blunt dissection the middle lobe is partially freed beneath the trigone. The right index finger is then introduced into this region, and by sweeping the finger in both directions laterally around the circumference of the adenoma, the entire adenoma is freed with the exception of the apex where the urethra comes through. The urethra is cut and the adenoma is grasped

and removed. The prostatic fossa is then packed with gauze to control bleeding temporarily. Sutures of zero chromic catgut are then placed through the prostatico-vesical junction and the rectus muscles thus, holding the bladder neck open and eliminating Babcock clamps at this point. This helps with exposure and eliminates instruments in the field which get in the way.

By enucleating the gland in a retrograde manner much less bleeding is encountered. It is thought that if a good line of cleavage is not obtained then blood vessels in the true capsule and the true prostate gland are torn into and bleeding is much more brisk. If a good line of cleavage is obtained only the vessels which communicate between the adenoma and the true prostate are broken and there is thus, less bleeding. The gauze is then removed from the prostatic bed and with the assistant aspirating the blood from the prostatic cavity the large vessels, which are usually encountered, at five and seven o'clock on the bladder neck are ligated with 000 chromic catgut, using a figure of eight suture. By retraction either with a small deaver or sometimes with the suction tip, other vessels are looked for and found in the prostatic capsule. These are either fulgurated or ligated with 000 chromic catgut. In this manner most all of the large bleeders can be adequately controlled. It is not necessary to have a perfectly dry field. The longer one spends trying to get every little small bleeder, the more blood the patient will lose during the procedure. After the bleeding is adequately controlled the mucous membrane over the middle lobe, which has been dissected free, is sutured to the floor of the prostatic bed. This is done with two continuous sutures of 000 chromic catgut; one extending from six to nine o'clock on one side, and the other from six to three o'clock on the other side. This pulls the mucous membrane over the bladder neck into the prostatic bed and eliminates any bar formation.

A number twenty-two thirty cc red rubber foley catheter is inserted through the urethra into the bladder and an appropriate size gel

foam prostatic cone is centered around the catheter and placed in the prostatic bed. The gel foam cone is optional but helps to control some of the small oozing vessels. The prostatic capsule and the bladder are then closed with a continuous locking suture of 0 chromic catgut. This is reinforced with another continuous locking suture of 0 chromic catgut. The bladder is then filled with sterile water and any points of leakage along the suture line are corrected by taking a mattress suture in that area. The balloon on the catheter is then inflated with twenty to thirty cc's of sterile saline. A drain is placed in the space of Retzius and the abdomen closed by approximating the rectus muscles with 0 chromic catgut interrupted sutures, tying these rather loosely so they will not cut through the muscles. The fascia is closed with continuous suture of 0 chromic catgut interlocking type and this is reinforced with several interrupted 0 chromic catgut sutures. The skin and fat are closed with deep mattress sutures of 00 silk. The balloon is then pulled down snugly against the bladder neck and the catheter is taped to the thigh.

The advantages of this procedure are several. First of all, nodes can be found if this happens to be a carcinoma of the prostate with metastatic nodes. Secondly, there are other procedures that can be done at the same time. Several herniorrhaphies have been done at the same time. Calculi in the bladder and lower ureter can be removed and bladder diverticulectomy and partial cystectomy can be performed along with the retropubic prostatectomy.

Recently, two bladder diverticula and a right ureteral calculus was removed at the time a retropubic prostatectomy was done on a seventy-six year old man. Also recently, a stone was removed from the bladder and a stone from the right lower ureter and a retropubic prostatectomy was done on an eighty year old man. One recent case weighed two hundred and fifty pounds and a sixty-eight gram prostate was removed without much difficulty.

There have been three cases that required surgery following a retropubic prostatectomy. One of these required surgery on the eighth postoperative day because of secondary hemorrhage. This individual was found to have a carcinoma of the prostate which was not suspected prior to surgery. The gland was enucleated. In retrospect, the patient would have fared much better had he had a radical retropubic prostatectomy. Another case had to have urine drained from the space of Retzius on the fourteenth postoperative day. The third case had a contracted bladder neck, five years after a retropubic prostatectomy and it was necessary to do a transurethral resection to correct this.

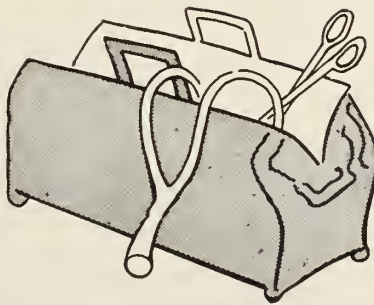
Incontinence has been very little trouble. There are a few cases that have had stress and urgency incontinence for a few days. A very few have stress incontinence for a period of two, three to four weeks. However, in all

cases this has been temporary and has spontaneously disappeared.

Summary

Over all, the results have been very good. Long term results usually are excellent. There were only three cases that had to have further surgery. Actually, one of these had to have surgery for obstruction. Usually, sexual activity is as good as before surgery. Urethral stricture is a very rare complication. Urethral meatotomy has been done in several cases. This has been more prevalent after transurethral resection of the prostate.

A review of five hundred consecutive cases of prostatic hypertrophy treated by retropubic prostatectomy has been presented. The age incidence, weight of adenomata, transfusions given, operating time, complications and deaths have been compiled. The technique of transvesicocapsular removal with its modifications has been described.



Periodic Health Examinations in Clinical Practice

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In a recent national survey of general practice, it was found that the average GP sees 22 patients a day, and the chronic, degenerative changes of middle and old age account for more visits than any other single group of illnesses.¹ In 1910, 30 per cent of all deaths in the United States were due to chronic degenerative or neoplastic diseases, whereas in 1960, 80 per cent of all deaths were due to these diseases. During this same period the average life span increased by almost 20 years.²

These data emphasize that the family or personal physician today must spend a large part of his working day diagnosing and managing, on a long term basis, older patients with chronic disease. One of the major reasons for this state of affairs is the remarkable progress made during the last 50 years in controlling infectious and nutritional diseases. Physicians entering practice since World War II rarely see such formerly very common diseases as typhoid fever and pellagra. Some of the **epidemic** diseases of the 1960's are atherosclerosis and hypertension, arthritis, diabetes and its complications, obesity, glaucoma, cancer of the lung, and psychoneurosis. Thus, the time has come to modify

our thinking about preventive medicine and its place in **clinical practice**.

The question as to whether preventive medicine should really be an area of major concern for the family physician is answered conclusively in the affirmative by his claim to be the source of **comprehensive** and **continuing** medical supervision for the family. He can only meet this responsibility fully by doing everything possible to keep these families healthy.

The data just cited affirm that preventive efforts can no longer be limited to immunization schedules, perinatal care and well baby checkups. A practical approach to the prevention of chronic diseases must be developed. In the present state of our medical knowledge this means **detecting** these diseases in their early stages, before irreversible organ damage has occurred, in the hope that their courses can be modified so as to prevent **premature** disability and death. This might be called "secondary prevention," because the occurrence of most of these diseases cannot at present be prevented.

The Periodic Examination

The best tool available at present for detecting chronic disease in the "preclinical stage" is the periodic examination of apparently healthy adults.^{3,4,5,6,7} This approach has been used by industrial and public health physicians for many years; but, until recently, it has been of little interest to clini-

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cians, partly because internship and residency training in the chronic diseases emphasizes almost exclusively the techniques required to care for patients with advanced disease.

Nevertheless, the concept of continuing, comprehensive care requires that clinicians apply the principles of preventive medicine to the early diagnosis and management of chronic disease, recognizing that practical limitations are imposed by the patient's financial resources and the physician's busy schedule.

The remainder of this discussion will suggest one way of meeting this part of the family or personal physician's responsibility to his patients.

Records

Much of the value of such periodic examinations is lost unless an adequate record is kept. Figures 1 and 2 (see page 22) illustrate the front and back of a 5" x 8" card that might be used to record data for filing with the patient's office record. These cards could serve as useful reference points as the patient is followed over the years, and offer a broad profile of the patient's state of health at the time of the examination. This profile contains information obtained from history, physical examination and a selected battery of laboratory tests.

To be suitable for inclusion, examinations and tests should be simple, reliable and inexpensive; and there should be appropriate modification of the test schedule to fit the individual patient's age and sex. The tests and procedures included in a given examination will also depend to a considerable extent on whether it is an initial evaluation of a new patient or a periodic followup examination of a patient already well known to the physician.⁸

Such periodic examinations should be used only for patients who consider themselves well. This is not a suitable approach to the workup of patients who present themselves to the physician with specific complaints.

History

The history should consist of a good "Systems Review" as well as questions aimed at discovering something about the patient's diet, mode of living, home situation, and family background. The Systems Review can be obtained quickly and adequately by using the *Cornell Medical Index* or a similar printed questionnaire, with suitable followup questions from the physician. This questionnaire can be completed in 15 or 20 minutes by anyone with a grade school education.^{9,10} In addition to the diagnostic leads afforded by specific "affirmative" answers to questions on the Index, the total number of "affirmatives" gives an indication of the patient's evaluation of himself and of his ability to function in society.¹¹

Physical Examination

There are certain specific aspects of the physical examination which should be emphasized as essential in a periodic checkup, because the yield, in terms of previously undetected disease, will be considerable. These are outlined on Figure 1.

Special Studies

In addition to the history and physical examination, there are some special studies which should be utilized to detect early disease in specific organ systems.

Blindness is a serious and common cause of disability, particularly in old age. Twelve per cent of all blindness in the United States is due to chronic simple glaucoma (31,000 people), and an estimated one million people have the undiagnosed disease.¹² Most victims are over 40 years of age and will present no symptoms until serious loss of vision has occurred. The only effective way of screening this susceptible population is with the tonometer,¹³ an instrument which is relatively inexpensive, and which any physician can learn to use effectively with a few minutes instruction and a little practice.

Figure 1

Name _____ Age _____
Race _____ Marital Status _____ Date _____
Address _____
Sex _____ Parity _____

I. HISTORIC

- a. CORNELL MEDICAL INDEX:
Total Positive Answers: _____
Systems Needing Further Study: _____
- b. Immunologic Status: Smallpox _____,
tetanus _____, diphtheria _____,
polio _____, Other () _____

II. Physical	Result Obtained	Check One		
		Normal	Abnormal	Not Done
Height	OS OD			
Weight				
Visual Acuity				
Blood Pressure				
Temperature				
Pulse Rate				
Respiratory Rate				
Funduscopy				
Thyroid				
Breasts				
(Male and				
Female)				
Heart—				
Auscultation				
Abdomen				
Pelvic				
Rectal and				
Prostate				
Peripheral Pulses				
(Dorsalis Pedis)				
Neurologic—				
Sensory				
Motor Reflexes				

Deafness is another serious cause of disability, and testing for hearing loss can be done easily in the physician's office. This examination is particularly valuable for school-age children, patients being treated with streptomycin or related drugs, and patients who work in noisy industries. An inexpensive double frequency screening audiometer is now commercially available and can be

Figure 2

Name _____ Date _____

III. Laboratory Procedure	Result Obtained	Check One		
		Normal	Abnormal	Not Done
Tonometry				
Audiometry				
Chest X-ray				
Tuberculin				
Vital Capacity				
ECG (Routine or lead-1)				
Diagnex Blue				
STS				
Sedimentation				
Rate or C-Re- active Protein				
Blood Sugar				
Hemogram				
Hemoglobin				
Hematocrit				
White Blood Count				
Differential				
RBC				
Morphology				
Sickle Cell				
Test (Negro)				
Urinalysis				
Specific Gravity				
Albumin				
Sugar				
Microscopic				
Occult Blood				
in Stool				
(from gloved finger)				

operated by the office nurse. No formal training in audiometry is required.¹⁴

In screening for **cardiovascular** and **respiratory disease**, the chest X-ray is a useful tool. However, it is relatively expensive and, except for an initial chest X-ray to serve as a baseline for future reference, probably should be limited to patients over 40 years of age. Its annual use in this age group is mandatory because it can detect three types of abnormalities which are not discernible otherwise: inflammatory and degenerative abnormalities of the parenchyma of the lung, especially tuberculosis, some abnormalities in the heart

and great vessels, and neoplasm of the lung or mediastinum.^{15, 16}

A tuberculin test, using either 0.1 ml. of 1:2,000 old tuberculin or 0.1 ml. of intermediate strength PPD, remains an extremely valuable screening test for tuberculosis.¹⁷ The new tuberculin "tine" test is effective and simpler to apply.¹⁸ In many cases, in our increasingly tuberculin negative population, particularly in obstetrical and pediatric practice, this test can be used as a substitute for routine chest X-ray.

A vital capacity determination would be most useful in detecting restrictive and obstructive lung disease and would serve as a useful baseline in older patients who are to be followed over a long period of time. The bellows type vitalometer, manufactured by McKesson-Scott, is perfectly adequate for a screening test.

The electrocardiogram should generally be reserved for patients over 40, and it is only a part of the screening necessary to detect early disease in the cardiovascular system, since over 50 per cent of patients with other evidence of cardiovascular disease have normal electrocardiograms. However, it has been shown that when an electrocardiogram, a blood pressure determination, a simple questionnaire, and a chest film are combined, over 95 per cent of all cardiovascular disease will be detected.¹⁹ It should be noted here that **detection** and **diagnosis** are not synonymous. However, patients will receive definitive diagnosis only after evidence of disease has been detected.

Gastrointestinal screening examinations should include measurement of gastric acidity, easily obtainable now with the Diagnex Blue® preparation for tubeless gastric analysis.²⁰ Patients who are found to have achlorhydria should, of course, have further examinations to rule out pernicious anemia and cancer of the stomach. Gastrointestinal X-rays have limited usefulness in periodic examinations because of their expense and the low yield of positive findings in asymptomatic patients.

No screening physical examination is complete without rectal examination, with careful palpation of the prostate in male patients, and with a finger smear of the stool for occult blood in all patients. Carcinoma of the prostate is the most common cancer in men over 65 years of age, and the only practical way to make this diagnosis early is with a careful rectal examination. Of course, the majority of large bowel malignancies are also within reach of the examining finger. The presence of occult blood in the stool is frequently the first sign of gastrointestinal malignancy, and this finding always demands careful clinical and X-ray evaluation.

Sigmoidoscopy, if limited to patients over the age of 40, will yield a good percentage of positive findings. It is a safe procedure if done without air insufflation and under direct vision. The instrument is inexpensive and the technique is not difficult to learn. If the patient has had a bowel movement on the morning of the examination, enema preparation is rarely required.

In screening for **renal disease**, urinalysis will serve if it includes an evaluation of the concentrating ability of the kidneys and microscopic examination of the fresh urinary sediment. In order to evaluate concentrating ability, the patient should be asked to drink no fluids after supper the night before specimens are to be collected. He is instructed to collect his first and second voided specimens on the morning of examination. The specific gravity of the second specimen should be 1.022 or more. The accuracy of the urinometer calibration should be rechecked periodically, using distilled water, if this test is to be meaningful.

Pelvic examination, including Papanicolaou smear of the cervical and vaginal epithelial debris, is the definitive screening test for disease of the female genital tract.²¹ This examination should be done at yearly intervals on all adult female patients, particularly young women. Cervical carcinoma, which still kills almost 40,000 American women every year, is potentially 100 per cent curable.

A hematocrit, white count, differential count, and an examination of red cells on the peripheral smear, generally comprises adequate screening for **blood disease**.²² A sickle cell preparation should be included on Negro patients.

The sedimentation rate²³ is another particularly useful screening test, because it is easy to perform and is exceedingly valuable in testing for the presence of inflammation, regardless of cause.

The serologic test for **syphilis** should continue to be used as a routine screening test. Between 1940 and 1955, four million asymptomatic cases of syphilis were found in the United States by this means.²⁴ Current estimates put the number of still undetected cases of syphilis in the population at approximately two million, and recent data suggest that syphilis is increasing in prevalence. Furthermore, the finding of a biologic false positive STS is sometimes the first clue that a patient has a generalized collagen disease.

In screening for **diabetes mellitus**, intensive efforts might well be restricted to persons with a positive family history, using a two hour postprandial blood sugar, which should be repeated once a year in this susceptible population.²⁵ By the same token, the family physician also should encourage all known diabetics in his practice to have their relatives obtain periodic postprandial blood sugar determinations. Urine sugars are not satisfactory for screening purposes.

Conference with Patient

After all examinations and tests have been completed and evaluated by the physician, there should be a final session with the patient. At this time, results would be discussed and advice given. This conference also offers the family physician a unique opportunity to serve as counselor and health educator to his patients. In fact, this may be the greatest single advantage in this approach to patient care.

Another word about expense to the patient: periodic examinations must be tailored to fit

the needs of the individual to be examined, omitting all tests not appropriate to his age or sex. Many of these procedures can be performed by the office nurse or technician. Some tests can be obtained in the State Health Department laboratory at no expense other than the cost of containers for mailing. In many areas, chest X-rays can be obtained through the local Health Department or tuberculosis association. By utilizing ancillary personnel and public facilities whenever possible and by using only those tests which offer a reasonable chance of detecting significant disease, one can reduce expense and save the doctor's time as well. Finally, while this point cannot be proven, it seems likely that many unnecessary visits to the doctor will be avoided if patients are really convinced that their doctor understands their health needs and is periodically reassessing these needs.

The physician's **professional** reward for this sort of work includes the intellectual satisfaction of making a few astute early diagnoses, the emotional satisfaction of really getting to know patients, and the very real saving in time and effort that having a good baseline affords when the patient presents himself with an acute illness.

Information on Diagnostic Tools

1. *The Cornell Medical Index—Health Questionnaire*: obtained from the Cornell-New York Hospital Center, 525 East 68th Street, New York 21, New York. Separate forms are available for men and women. Cost: approximately 5c each.

2. *Tonometer*: manufactured in the United States by the Storz Instrument Company, St. Louis, Missouri, and available from surgical supply houses at about \$60.00.

3. *Audiometer*: a double frequency screening audiometer, the Ambco Oto-Chek, Model 700 B, ear phones with switch, Ambco Incorporated, Los Angeles, California, available through surgical supply houses, for about \$120.00.

4. *Vitalometer* (McKesson-Scott Bellows-type): adequate for screening. Available through surgical supply houses at approximately \$35.00.

5. *Diagnex Blue*®, Squibb: packet contains dye resin granules and caffeine tablets. Histamine stimulation can be used. Directions accompany the package.

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Editorials

Guest Editorial....

Educational Opportunities at the Medical College of Alabama

by

S. Richardson Hill, Jr., M. D.

Dean, The Medical College of Alabama

The purpose of the Medical College is to train physicians, and the primary aim of the physician is to care for the patient, so that everything we do at the Medical College in the process of training physicians is ultimately for the benefit of the patient. While our purpose is to train physicians, our aim is to train superior physicians and to do this, we must have a superior faculty and student body. We are now in the process of acquiring both of these.

The Medical College of Alabama is one of the youngest schools in the United States, having graduated its first class in 1946. In a short period of time, and particularly in the last five years, the Medical College has matured and grown in stature and prestige so that it is now considered one of the outstanding medical colleges of the Southeast and among the great institutions of the nation. It ranks in the top one-third of the nation in its research activity. The faculty of the Medical College is composed of internationally known educators and authors whose textbooks are standards throughout

the world. At many national and international scientific meetings, the Medical College's faculty presentations make up a significant proportion of the total program.

Because of this reputation, students in many categories are attracted to the Medical College from all over the world; and because of the outstanding facilities and the reputation of the clinical faculty, patients are referred to the Medical Center from all over this region and from other parts of the nation.

There are, however, along with many highly developed areas, certain undeveloped departments within the Medical School. Because of a lack of adequate space and operating funds, there are greatly limited academic programs in the departments of Otolaryngology, Plastic Surgery, Obstetrics and Gynecology, Orthopedic Surgery, Ophthalmology, and Neurosurgery. Indeed, there are no full-time staff members in the divisions of Otolaryngology, Neurosurgery, Plastic Surgery, Clinical Infectious Diseases and Physical Medicine. Attempts are being made

to strengthen and enlarge these areas to bring them up to the educational and research standards of the major clinical departments of medicine and surgery. The staff and programs of many of the basic science departments are also in great need of expansion.

Since becoming Dean eight months ago, we have exerted a great effort toward strengthening the academic programs and prestige of the Medical College. Major revamping in the organizational structure of the Medical College was accomplished in an attempt to insure more efficient teaching and service programs. Clinical services at the University Hospital and Hillman Clinics are now under the rotating chairmanship of two joint chiefs of staff, Dr. Champ Lyons and Dr. W. B. Frommeyer, Jr. Dr. Lyons is continuing in his former position of professor and chairman of the department of surgery and surgeon-in-chief for the University Hospital and Dr. Frommeyer is also continuing as professor and chairman of the department of medicine and physician-in-chief for the University Hospital. As a major step toward better administrative functioning the entire Medical College faculty has been organized into a cohesive advisory and informative body for the benefit of both faculty and administration. This organization will provide channels of communication heretofore unavailable within the College. The new *Alabama Journal of Medical Sciences* has been established and will be the first Center-wide scientific journal to be published by the Medical Center for the benefit of all physicians.

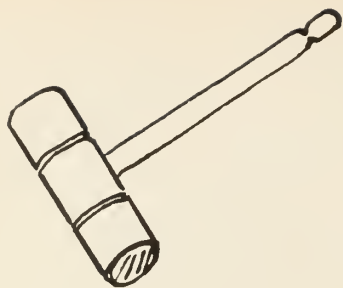
Recognizing that it is the duty of a university to keep physicians of the state informed of the latest techniques in medicine, the Medical College has instituted for the first time an organized program of continuing education in this state for practicing physicians. The first of four educational courses was presented this spring. Within a year such programs as these will be carried all over the state at the request of local county medical societies and the local chapters of the Alabama Academy of General Practice.

The Medical College has undertaken the

first major curriculum revision since the four year school was opened in 1945. Such a revision will ultimately include in the teaching programs new developments, discoveries and techniques in medicine and will weed out resultant outmoded methods. Plans are to re-examine opportunities for students to obtain for themselves intangible benefits of a medical education; to allow them free time to delve into scientific areas of interest to each student and to permit brighter students to learn at a more vigorous rate and slower students at a less intensive rate. One of the most important aspects of our program is to establish in the student's mind a fundamental sense of responsibility, a deep feeling for humanity and a complete understanding of the principles of self-teaching.

With the change of trends in majors taken by college students brought about by the atomic age, the Medical College is faced with a reduction in the number of superior students applying for enrollment. The Physicians Advisory Board of the Medical Association of the State of Alabama is co-operating with the Medical College in an attempt to encourage interest in medical careers. To implement the program formulated by the Medical College administration and the Physicians Advisory Board, a physician-representative from each county was selected. It will be the job of the representative to interview and counsel prospective students in their own counties and to encourage the bright students toward medicine and the Medical College of Alabama.

Finally, the activities and progress of the Medical College should be of vital concern to everyone in the State of Alabama. Its progress is bringing great prestige upon the state and indeed is materially improving the economic and cultural development of this region. We believe that the Medical College will continue to progress and to contribute vitally to the overall improvement of the State of Alabama, and that this contribution to the State will be expanded in direct proportion to the enthusiasm and support of the citizens of the State.



President's Page



In trying to carry out a program of any kind which involves the membership of many people, as in an organization such as the Medical Association of the State of Alabama, there must necessarily be set up committees through which to execute said program.

There are seventeen groups of this kind in our organization. Each one is composed of a chairman and four or more members; this does not include the ten men who make up the tri-functional Board of Censors. These committee activities will reveal the characteristics of the men who are busy in carrying along the affairs of organized medicine in Alabama.

From these facts one learns there are one hundred or more doctors giving of their time and money just to keep this organization alive and growing. They compose the active leaders from year to year. They are our designated representatives doing a job for us. They are just as busy in their several practices as any one else. They make these sacrifices because they believe in organized medicine and know its value to all concerned, both to laymen and doctors. All of us should appreciate their efforts and show it by attending all meetings of our various county societies and participating in every constructive way toward easing any and all tensions

of whatever nature that might impede our state program. None of us should condemn their acts or adversely criticise them, unless we can offer better suggestions and do a better job.

These men were chosen because their attitudes were thought to be compatible with the purposes of the particular committee on which they were assigned.

No one should accept a position on a committee unless he can give it the consideration and time it will take to accomplish successfully the task prescribed.

All committees must have a chairman whose duty it is to activate whatever projects are needed in carrying on the work of the organization of which it is a part. He should strive with all his talents to correlate the opinions of all members under him and keep them actively concerned, not only in his particular committees' purposes but also in the total program of the organization. He must remember that all actions, conclusions, and recommendations are subservient and responsible to the parent organization.

The tenure of office relative to committee membership is sufficient to allow for on-the-job training, plus the opportunity of applying the knowledge which will be accumulated therefrom and endow the retired member with a wisdom that will make him a better member in organized medicine during the balance of his life.

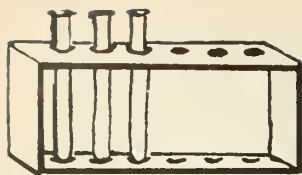
These committee membership positions are

changed frequently enough so that before long every doctor will be offered an opportunity to serve and demonstrate his abilities in assisting in carrying on the program in his organization and thereby exemplify the reasons why he is a doctor.

It was my privilege and honor to sit down with the chairmen of all these committees recently and listen to their plans for this year. Each one had given much consideration to his particular assignment, as well as to the overall program. After about three hours of harmonious, intelligent, and professional discussions each was acquainted with what the others were planning to do; and all were prepared to activate the several committees and begin compiling a complete and profitable report for the meeting in Montgomery next April. By-the-way every chairman was present or had his report in or his absence justified. For this co-operation and fellowship your president will forever be grateful.

Because these committeemen are so vitally concerned, there should be added an atmosphere of security to our Association which should stimulate each member to learn and do more, by way of individual co-operation, with the task at hand—that of making better doctors so they can render better services to the citizens of Alabama.

J. S. Daves, M.D.



STATE DEPARTMENT OF HEALTH

LIMITED PAYMENTS FOR PHYSICIAN'S SERVICES

The Kerr-Mills Act provides for the post-hospital care of patients who have been hospitalized under HOAP or MAA. The physician can receive limited payments for services such as office or home visits, electrocardiograms, blood examinations, and X-ray evaluations. He can also receive payment for nursing home visits. This provision will provide nursing home patients with the means of securing some services of a private physician of their choice on a regular basis.

The Department of Pensions and Security will pay up to \$5 per visit to physicians for visits made in the thirty-day period after the patient has left the hospital. A maximum of \$15 can be paid to the physician for these visits.

An X-ray evaluation can be made if it pertains to the condition which caused the patient to be hospitalized. The physician can receive a maximum of \$15 for this service. In addition, a blood examination can be made if it relates to the prognosis for which the patient received hospitalization. The reimbursement for this service cannot exceed \$5.

The physician must deduct any insurance or other payments which he receives for these visits from his claim to the state.

The billing form, "Physician's Services, Request and Authorization Under HOAP And MAA," will be sent by the county department of pensions and security directly to the physician providing post-hospital care if it is requested by the patient or someone in his behalf. Upon the completion of the billing form, it must be certified and notarized by the county department of pensions and security. Then the form should be sent prompt-

ly to the State Health Department, care of Dr. R. L. Lawrence, Acting Director, Medical Care Programs. Except in unusual situations, the State Health Department cannot approve the payment of claims for services which have not been received within ninety days after the patient is discharged from the hospital.

A nursing home patient's private physician will be paid by the Department of Pensions and Security for one visit each calendar quarter at a maximum rate of \$5 per visit if the patient receives an old age pension and if he has no insurance which will pay for the physician's services.

Each licensed nursing home keeps forms for billing physicians' charges. This form should be completed by the physician at the time of his visit to the patient. It is then forwarded to the county department of pensions and security for certification of eligibility. This department then sends it to the State Health Department for review and approval. The form must have the patient's signature. If he is unable to sign, then his spouse, legal guardian, or adult child may sign for him; or he may make his mark and have it properly witnessed. Payment of claims will be made by the State Department of Pensions and Security directly to the physician who rendered the service.

The provisions of the Kerr-Mills program will help to provide physicians' services to citizens 65 years and older who are in need of medical care. It provides medical care for persons presently receiving Old Age Assistance benefits and for persons over 65 who do not receive welfare aid but who are in need of and qualify for Medical Assistance For The Aged under the Kerr-Mills program.

DEPARTMENT OF HEALTH

BUREAU OF LABORATORIES

Thomas S. Hosty, Ph.D., Director

May 1963

Examinations for malaria	5
Examinations for diphtheria bacilli and Vincent's	18
Agglutination tests	3
Typhoid cultures (blood, feces, urine and other)	120
Brucella cultures	0
Examinations for intestinal parasites	120
Darkfield examinations	1
Serologic tests for syphilis (blood and spinal fluid)	25,948
Examinations for gonococci	1,740
Examinations for Negri bodies (smears & animal inoculations)	248
Examinations for tubercle bacilli	3,414
Milk and dairy products examinations	3,951
Water examinations	1,948
Miscellaneous examinations	3,936

Total *41,498

*Dothan Branch Laboratory report not received in time to be included in above report.

BUREAU OF PREVENTABLE DISEASES

W. H. Y. Smith, M. D., Director

CURRENT MORBIDITY STATISTICS

1963

	April	May	*E. E. May
Tuberculosis	119	102	187
Syphilis	142	116	138
Gonorrhea	282	345	327
Chancroid	2	1	2
Typhoid fever	1	2	2
Undulant fever	0	0	1
Amebic dysentery	7	2	2
Scarlet fever and strep. throat	122	77	59
Diphtheria	0	0	2
Whooping cough	4	3	41
Meningitis	6	6	9
Tularemia	0	0	0
Tetanus	3	3	2
Poliomyelitis	0	0	1
Encephalitis	1	0	1
Smallpox	0	0	0
Measles	313	305	1,105
Chickenpox	142	160	201
Mumps	91	45	118
Infectious hepatitis	37	46	45
Typhus fever	0	0	0
Malaria	0	0	0
Cancer	662	734	585
Pellagra	1	2	0
Rheumatic fever	12	20	10
Rheumatic heart	39	18	31
Influenza	1,832	174	130
Pneumonia	334	211	218
Rabies—Human cases	0	0	0
Pos. animal heads	1	1	0

As reported by physicians and including deaths not reported as cases.

*E. E.—The estimated expectancy represents the median incidence of the past nine years.

BUREAU OF VITAL STATISTICS

Ralph W. Roberts, M. S., Director

PROVISIONAL BIRTH AND DEATH STATISTICS, AND COMPARATIVE DATA, APRIL 1963

Live Births Deaths Causes of Death	Number Registered During April			Rates* (Annual Basis)		
	Total	White	Non-White	1963	1962	1961
Live Births	5,400	3,423	1,977	19.5	21.6	21.7
Deaths	2,583	1,690	893	9.3	9.6	8.5
Fetal Deaths	120	56	64	21.7	19.7	21.2
Infant Deaths—						
under one month	128	75	53	23.7	19.4	22.4
under one year	177	89	88	32.8	30.4	32.2
Maternal Deaths	3		3	5.4	8.3	8.3
Causes of Death						
Tuberculosis, 001-019	26	18	8	9.4	10.6	9.9
Syphilis, 020-029	3	1	2	1.1	1.1	2.6
Dysentery, 045-048					0.4	
Diphtheria, 055						
Whooping cough, 056	1		1	0.4		
Meningococcal infections, 057	1		1	0.4	0.7	0.4
Poliomyelitis, 080, 081						
Measles, 085					1.5	0.7
Malignant neoplasms, 140-205	288	214	74	103.9	113.3	116.3
Diabetes mellitus, 260	38	26	12	13.7	15.3	11.4
Pellagra, 281	1	1		0.4	0.4	
Vascular lesions of central nervous system, 330-334	355	223	132	128.1	128.6	124.4
Rheumatic fever, 400-402	2	1	1	0.7		1.5
Diseases of the heart, 410-443	896	618	278	323.3	338.2	287.1
Hypertension with heart disease, 440-443	132	41	91	47.6	52.5	71.0
Diseases of the arteries, 450-456	56	38	18	20.2	23.7	20.6
Influenza, 480-483	40	17	23	14.4	5.1	3.7
Pneumonia, all forms, 490-493	87	51	36	31.4	32.1	18.4
Bronchitis, 500-502	5	2	3	1.8	2.2	2.2
Appendicitis, 550-553	4	3	1	1.4	1.1	
Intestinal obstruction and hernia, 560, 561, 570	11	7	4	4.0	5.1	4.0
Gastro-enteritis and colitis, under 2, 571, 0, 764	5	1	4	1.8	2.6	2.2
Cirrhosis of liver, 581	13	11	2	4.7	6.2	3.7
Diseases of pregnancy and childbirth, 640-689	3		3	5.4	8.3	8.3
Congenital malformations, 750-759	27	20	7	5.0	5.1	3.7
Immaturity at birth, 774-776	38	18	20	7.0	5.1	6.4
Accidents, total, 800-962	178	129	49	64.2	66.7	59.6
Motor vehicle accidents, 810-835, 960	73	54	19	26.3	30.6	26.1
All other defined causes	360	235	125	129.9	139.9	54.1
Ill-defined and unknown causes, 780-793, 795	145	56	89	52.3	41.2	44.2

*Rates: Birth and death—per 1,000 population

Infant deaths—per 1,000 live births

Fetal deaths—per 1,000 deliveries

Maternal deaths—per 10,000 deliveries

Deaths from specified causes—per 100,000 population

The Woman's Auxiliary

Where Do You Stand?

"Freedom is an open door but you must walk through it.

Freedom is a ladder but you must climb it."

These are the words of Wilferd A. Peterson published in *This Week* magazine of October 7, 1962—words that some of us in Alabama, physicians and their wives, could ponder.

What do they mean to you?

To me, they mean that beyond that door are many obligations that I, as a physician's wife and as a good citizen, must meet. I can stay where I am and be reasonably comfortable; but if I aspire to the adventure of living my own life in my own way, to the satisfaction of helping my husband keep his freedom to practice good medicine as he knows it, to the fulfillment of rearing my family in a free community, I must walk through that door. I've a responsibility to family and community that I cannot discharge by staying on the familiar side of that threshold to freedom.

Freedom can't be won by half measures. A physician's wife must, now as never before, give full support to her husband's profession. Token membership in an auxiliary is not enough; and the physician's wife who will not join with other medical wives to work to preserve the free practice of medicine bars the way to that open door.

Active membership—active support is the *privilege* of every physician's wife. This is an obligation to our husbands that we assumed, and that they had every right to expect, when we married them. None of us dreamed we would need to add political know-how to the exacting requirements demanded of a physician's wife. Politics has been forced upon the medical profession. The practice of medicine is the "whipping boy" of ambitious politicians. Good citizenship is waiting on the other side of freedom's door, promising the best medicine in the world for the public, a better environment for our children, immunity from the restrictions of government control for our husbands.

I can stay on my side of that door and live my comfortable, circumscribed life—until the government, the politicians, the ones who want to change our democratic way of life to a regimented, socialistic existence slam it shut. Even then, I could console myself by saying, "What could I—a lone physician's wife in my county or, perhaps, one of many in my auxiliary—have done to keep the door to freedom open?" In my heart, though, I should know that I could have joined my strength to others and that, banding *together*, we could have moved through the opening offered us so that it could not close. I should know that I could have lifted my voice in support of my husband's and my own beliefs—

that I could have kept my friends in my community informed on the misleading statements of supporters of medical aid under social security—

that I could have accepted a chairmanship or office in my own organization that would have added authority to my efforts in support of my county medical society—

that I, because of timidity, apathy, lack of conviction was as responsible for the closing door as those who were pushing so hard from the other side.

But, if I walk through the open door, I shall find Mr. Peterson's ladder; and each rung to be climbed will represent a deed performed, something accomplished for American Medicine. I shall see it reaching up and up with auxiliary members mounting surely from chairmanship to chairmanship, from office to office—always in support of auxiliary and medical society objectives.

It will reassure me to remember that when one mounts this ladder, there can be no stopping nor turning back.

And I shall take pride in being one of that company of physicians' wives who are climbing toward freedom for husbands, families, and communities.

What do Mr. Peterson's words mean to you?

WHERE DO YOU STAND?

Mrs. William G. Thuss.

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A New Triple Combination Tablet For Anti-Hypertensive Therapy

F. Bernard Schultz, M. D., F. A. C. C.

Auburn, Alabama

In 1957, Novello and Sprague¹ and Beyer and his associates,² synthesized chlorothiazide, a heterocyclic sulfonamide compound, which demonstrated the properties of carbonic anhydrase inhibitors and mercurial diuretics. Structurally newer thiazide derivatives have been developed since, but in general, their effect has been similar.

Figure I shows the structural formula of chlorothiazide. Figure II shows a change in the formula of chlorothiazide, with the introduction of a benzylthiomethyl group into position three of the parent heterocyclic ring. Chlorothiazide can also be changed chemical-

ly by hydrogenation to a highly active derivative, hydrochlorothiazide. (Fig. III).

Although the thiazides possess hypotensive properties, their action is not all-inclusive for every grade of hypertension. Therefore, in order to achieve broader antihypertensive effectiveness, the thiazides have been combined with other hypotensive drugs of known potential.

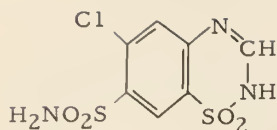
One of these more effective combinations contains reserpine, a rauwolfia derivative known for its dependable hypotensive action. This combination, because of the reserpine, has the added quality of depleting the myocardium of its catecholamine stores and has demonstrated a protecting effect in laboratory animals against possible catecholamine-induced cardiac necrosis.^{3,4}

PURPOSE OF STUDY

In 1962, the author⁵ evaluated reserpine, hydralazine hydrochloride and hydrochlorothiazide in varying grades of hypertensive states separately and as a single tablet con-

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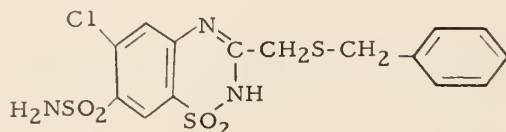
Fig. I



6-chloro-7-sulfamyl-1,2,4-benzothiadiazine-1,1-dioxide

CHLOROTHIAZIDE

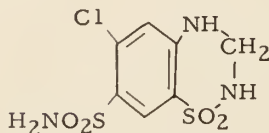
Fig. II



3-benzylthiomethyl-6-chloro-7-sulfamyl-1,2,4-benzothiadiazine-1,1-dioxide

BENZTHIAZIDE

Fig. III



6-chloro-7-sulfamyl-3,4-dihydro-1,2,4-benzothiadiazine-1,1-dioxide

HYDROCHLOROTHIAZIDE

taining all three drugs in lower dosages. With this clinic experience serving as background, the investigator decided to extend the original comparative evaluation by examining a thiazide-reserpine combination against the triple compound tablet in order to determine whether a third component is truly required in the tablet. The investigator thus decided to evaluate a combination tablet (hydrochlorothiazide and reserpine—Hydropres® 25) against a single tablet of three depressor agents (reserpine, hydralazine hydrochloride and hydrochlorothiazide) (Ser-Ap-Es®) from the point of view of effectiveness and advantageousness.

PHARMACOLOGY

Pharmacologically it has been shown that hydralazine hydrochloride provides a dual

effect—(a) a reduction in blood pressure and (b) an increase in renal blood flow. With reserpine, hydralazine acts on the hypothalamus and the vasomotor centers and since hydralazine itself acts upon the arteriolar smooth muscle, a better flow through the kidneys is produced. Moreover, since reserpine has a post-ganglionic effect, the sympathetic fibers are advantageously affected. Keeping these basic elements in mind, the study was initiated.

MATERIAL AND METHODS

Forty-six out of 50 patients with arterial hypertension were selected and observed for a period of three months. There were four "early dropouts" who were not evaluated. Table 1 depicts the age and sex distribution of these patients with the initial severity of hypertension before treatment began. There were 15 males and 31 females ranging in age from 33 to 83.

Initially, complete examinations including urinalyses and hematocrits were done. Dark-room eyeground examinations were likewise completed. In addition, patients were taken off all hypotensive drugs for a period of ten to 14 days before the study was begun. For a period of five weeks, all patients were given hydrochlorothiazide with reserpine one or two tablets after breakfast depending upon the degree of hypertension. Table 2 shows blood pressures after the fifth week of treatment. At the beginning of the sixth week, the hydrochlorothiazide with reserpine was discontinued and those patients who showed no appreciable lowering of the blood pressure were continued on therapy. These patients Nos. 26, 37, 40 and 50 were started on the reserpine, hydralazine hydrochloride and hydrochlorothiazide combination.

At the beginning of the seventh week, patients who had been taken off the medication for one week were re-examined. Urinalysis, hematocrit and darkroom eyeground examinations were repeated.

This group was then started on a tablet containing reserpine, hydralazine hydrochloride

ANTI-HYPERTENSIVE THERAPY

TABLE I

Case No.	Age	Weight	Sex	Initial Supine B. P. before medication
1	67	155½	F	160/100
2	59	232½	F	154/96
3	42	242	M	180/100
4	83	169½	F	168/98
5	49	129	F	160/98
6	72	117½	F	190/110
7	45	171	F	154/90
8	48	250	F	154/96
9	71	171	F	204/108
10	57	263	F	186/110
11	80	165	F	194/90
12	46	190	F	184/112
13	53	166½	F	158/90
14	77	180½	F	170/100
15	64	150	F	160/90
16	63	198½	F	170/100
17	66	128	M	154/96
18	63	180	F	204/140
19	52	237	M	170/128
20	62	208	F	148/90
21	64	147¾	F	160/88
22	65	186	F	150/90
23	37	144	F	208/132
24	69	157¾	F	174/104
25	72	221	M	150/118
26	65	235	M	242/118
27	78	142	M	164/102
28	63	129¾	F	170/108
29	56	218	M	194/104
30	52	127½	F	174/118
31	56	218	M	190/108
32	73	148½	M	154/90
33	60	201	F	150/100
34	49	120	M	194/124
35	57	195	M	170/90
36	73	181¼	F	170/90
37	39	146	F	194/106
38	65	112	F	192/94
39	49	157	F	160/100
40	62	140	F	200/118
41	49	178	F	172/70
42	51	222½	F	180/110
43	60	162	M	160/110
44	66	144	F	170/104
45	57	149	F	232/138
46	51	195	M	174/90
47	37	204½	M	162/98
48	77	122	F	160/110
49	57	143¼	F	140/102
50	33	203	M	170/108

Average initial blood pressure
174.04 systolic
103.68 diastolic

Average weight 175.11 lbs.

TABLE II

Case No.	Weight	Supine B. P. after five weeks
1	153	144/84
2	233	164/94
3	240½	158/92
4	173	176/100
5	128	130/86
6	121	134/76
7	did not finish study	
8	251	150/88
9	164½	144/92
10	257	152/108
11	164½	158/82
12	189½	130/90
13	did not finish study	
14	185	150/102
15	150	140/80
16	199½	160/102
17	128½	132/96
18	182	180/112
19	238½	174/104
20	209½	154/90
21	145	144/80
22	191¼	154/94
23	139	138/100
24	158½	158/100
25	218	174/114
***26	236	210/118
**27	142	190/90
28	125	150/100
29	207½	178/94
30	128½	140/104
31	215	180/98
32	155	142/78
33	201	160/102
***34	120	198/128
35	196	150/80
36	185	174/98
***37	148	240/124
***38	111¾	172/90
39	161	138/94
***40	137½	178/120
41	178½	158/90
42	233	160/104
43	162½	148/110
44	143½	154/96
***45	145½	220/122
46	195	158/88
47	205	144/96
48	did not finish study	
49	143	130/84
***50	199¾	214/148

*** no discontinuance of medication, began Ser-Ap-Es® 6th week.

** Hospitalized

and hydrochlorothiazide tablet (Ser-Ap-Es®). A final urinalysis and eyeground examination was repeated at the end of this period. Table 3 shows the blood pressures, weight, and pulse and other observed changes. Table 4 shows the result of the last six weeks of the study. This table depicts blood pressures and weights after a discontinuance of medication for one week.

DISCUSSION

Despite all the information accumulated on hypertension since the time of Bright, scientific findings have demonstrated only one thing: that as we age, arterial tension tends to rise.

For the purposes of this study, arbitrary average blood pressure figures compiled by the insurance companies, the armed forces and others were chosen and used as the break-off point between arterial tension and no arterial tension. However, if one reads Pickering's monograph,¹⁴ the above selection for "essential hypertension" and the figure which the American medical profession prefers to call the upper limits of normotension still leaves much to be desired. Table VI shows a partial list of what some authorities have given as their dividing lines between "normotension" and "hypertension". However, for the study, "hypertension" meant those individuals with a systolic pressure above 140 mm of Hg. and a diastolic above 90 mm of Hg.

Actually, it has only been since 1930 when records began to show that hypertension was responsible for over half our yearly deaths, that we really began to search for some sound method of treating this problem.

At this early date, the search revolved around a possible single cause for this condition. Today, however, it is believed that hypertension is a result of more than one cause. In fact, there are so many facets to this problem that almost every laboratory and clinic can have its own theory without disturbing any of their colleagues. Moreover,

TABLE III

Case No.	Weight	B. P.—no medication for 1 week
1	157+	158/98+
2	235+	170/102+
3	242+	198/126+
4	177+	182/100+
5	131+	158/94+
6	119—	154/88+
7	did not finish study	
8	254+	164/100+
9	172½+	170/98+
10	269+	230/160+
11	166½+	162/98+
12	191+	152/102+
13	did not finish study	
14	did not finish study	
15	152¼+	160/100+
16	203¾+	212/114+
17	129½+	164/98+
18	183+	212/138+
19	242+	192/132+
20	213+	160/100+
21	148½+	174/96+
22	190—	158/110+
23	143+	152/104+
24	161½+	—148/102+
25	221+	+194/102—
26	medication continued (Ser-Ap-Es®)	
27	144+	200/90+*
28	126+	142/90—
29	210½+	222/102+
30	128¾+	+140/100—
31	211¼—	190/102+
32	159+	156/90+
33	202+	—154/104+
34	medication continued (Ser-Ap-Es®)	
35	196	130/70—
37	medication continued (Ser-Ap-Es®)	
38	medication continued (Ser-Ap-Es®)	
39	158—	+140/92—
40	medication continued (Ser-Ap-Es®)	
41	178½	190/110+
42	237+	+162/98—
43	164+	180/114+
44	142½—	144/82—
45	144¾—	218/120—†
46	199+	174/90+
47	205	+152/94—
48	did not finish study	
49	144½+	130/88+
50	medication continued (Ser-Ap-Es®)	

+ equals gain in weight, as well as bld. pres.

— equals loss of weight or drop in bld. pres.

* hospitalized

† started Ser-Ap-Es® 4th week

ANTI-HYPERTENSIVE THERAPY

TABLE IV

Case No.	Weight	B. P.— end of study
1	157½	140/86
2	228	140/90
3	241	168/116
4	177½	170/100
5	127	128/78
6	118	128/70
7	did not finish study	
8	249	134/90
9	167½	152/94
10	261½	158/110
11	163	136/78
12	190	136/90
13	did not finish study	
14	did not finish study	
15	147½	132/86
16	200½	144/96
17	125¾	128/78
18	183	146/100
19	235¼	170/120
20	206	146/90
21	143	144/82
22	186½	136/94
23	137	126/64
24	159	132/90
25	210¼	154/90
26	234	188/110
27	?	200/90
28	126	130/84
29	209	150/78
30	129	148/92
31	213¾	164/90
32	154¼	142/78
33	201	122/90
34	120	162/100
35	192	142/96
36	181	162/82
37	147	152/110
38	108	156/82
39	158	124/78
40	136¼	130/84
41	176	142/84
42	236	154/106
43	160½	150/104
44	147¾	136/88
45	143	146/92
46	190¼	146/82
47	205	156/84
48	did not finish study	
49	143½	118/82
50	197	160/108

Average final blood pressure

146.26 Systolic

90.65 Diastolic

Average weight 170.44

Average weight loss 4.67 lbs.

TABLE V

Classification of hypertension (Merrill)

- I. Pulmonary hypertension
- II. Systemic hypertension
 - A. Systolic hypertension only
 1. Increased stroke volume
 - a. Thyrotoxicosis
 - b. Anemia
 - c. Heart block
 - d. Arteriovenous fistula
 - e. Psychogenic
 2. Rigidity of the aorta
 - a. Arteriosclerosis
 - B. Combined systolic and diastolic hypertension*
 1. Renal
 - a. Pyelonephritis
 - b. Glomerulonephritis
 - c. Congenital lesions
 - d. Obstructive lesions
 - e. Renal vascular occlusion
 2. Endocrine
 - a. Acromegaly
 - b. Adrenal cortical hyperfunction
 - (1) Aldosteronism
 - (2) Cushing's syndrome
 - c. Pheochromocytoma
 3. Neurogenic
 - a. Brain tumor (rapidly expanding)
 - b. Cerebrovascular accidents
 - c. "Diencephalic syndrome"
 - d. Poliomyelitis
 - e. Psychogenic
 4. Unknown etiology
 - a. Essential hypertension (benign)
 - b. Eclampsia
 5. Miscellaneous
 - a. Coarctation of the aorta
 - b. Increased intravascular volume

* Any of the conditions associated with diastolic hypertension may become rapidly progressive (malignant).

TABLE VI

Division	Author
120/80	Robinson & Brucer (1939)
130/70	F. J. Brown until 1947
140/80	D. Ayman (1934)
140/90	G. A. Percra (1943)
150/90	G. B. Thomas (1952)
160/100	P. Bechgaard (1946)
180/100	N. M. Burgess (1948)
180/110	W. Evans (1956)

as Page⁷ has so aptly stated, "no single cause has been found but rather more and more facets have appeared and are still being found." Like most of us, this author^{8,9,10,11,12} continues to search for an effective drug with hypotensive value and little or no side effects.

Many drugs have been added to the armamentarium for hypotensive vascular disease, but the problem of choosing the correct drug for one's patients requires much serious thought and deliberation.

First, as we noted above, we must realize that because of the various grades of hypertension, it is not a condition where a single drug can always be effective. This is especially true, if we study Merrill's⁶ outline (Table 5) which divides hypertension into two categories (pulmonary and systemic). There are even situations where drugs are not the answer. For example, hypertension caused by coarctation of the aorta will be reduced by removal and repair of the aortic coarctation. Similarly, removal of a pheochromocytoma or a polycystic kidney will alleviate hypertension related to the disease. This is true in many conditions where removal of the cause eliminates the need for hypotensive drugs, whether it be systolic hypertension only or combined systolic and diastolic hypertension.

Nevertheless, a great deal of time and effort has been put into the search for the alleviation of hypertension. Page,⁷ Dustan, Heuer, Merrill,⁶ Goldblatt, Mendlowitz¹⁵ and others too numerous to mention have spent their lives in this work.

Despite the search, Merrill⁶ believes that "the rationale for the use of drugs which lower blood pressure based on the belief that prolonged marked elevation of systemic arterial pressure is in itself harmful, and may contribute to and hasten the vascular lesions."

While there are those who may agree with this view, one can readily see by statistically studying some of the cases reported in this study, as well as in others, that the use of depressor agents has certainly aborted or

reversed progressive changes which could have led to malignant hypertension.

One case in particular, patient No. 23, during her last pregnancy had a severe bout of toxemia with hypertension. Depressive drugs were prescribed for her. Her toxemia was controlled and she went on to normal delivery. However, two months following her pregnancy she again developed a hypertension which we were able to control on drug therapy.

The use of thiazide diuretics in the management of hypertension, either as the sole therapeutic agent or in combination with reserpine and ganglionic blocking agents, has been reviewed by Gifford.¹³ It was Gifford's conclusion that the introduction of diuretics into the field of anti-hypertensive therapy has resulted in better control of hypertension with fewer drug-induced side effects. The author concurs with this opinion.

The use of hydrochlorothiazide with reserpine in this study demonstrated comparable favorable results with minimal side effects as other reserpine thiazide combinations. However, it is to be noted that the diuretic action of this combination was not necessarily uniform and, in some instances, provided no noticeable increase in urinary output.

As can be seen by the tables, this combination was fairly good for patients with mild arterial tension. However, in those cases of moderate to severe hypertension, the results were not as satisfying.

It was further noted that when this combination of drugs was stopped, a majority of the patients showed an increase in weight, a return of ankle edema, and significant rises in blood pressure. (Table 3)

Cases No. 26, 37, 40 and 50 showed no significant response to hydrochlorothiazide and reserpine after five weeks. Since these cases were categorized as severe hypertensives, it was felt that the addition of hydralazine hydrochlorothiazide without the elimination of the other two ingredients should be tried. These particular patients showed immediate,

good response to the addition of the triple combination in lieu of the double compound.

With the introduction of hydralazine hydrochloride to the combination of reserpine and hydrochlorothiazide into the regime of treatment in the present study, an immediate excellent response was shown. This was especially true in those patients who did not show favorable lowering of the systolic pressures with just the reserpine and hydrochlorothiazide. It was equally true in those patients who were taken off the reserpine-hydrochlorothiazide after five weeks with no medication for one week.

While the suggested treatment for the reserpine, hydralazine hydrochloride and hydrochlorothiazide combination is one tablet TID, most of the patients in this study only received one tablet daily and continued to show excellent results. However, patients No. 3, 16, 18, 19*, 26*, 27, 31, 34, 37, 40*, 45, 46 and 50 received two tablets a day and later three patients No. 19, 26 and 40 received three tablets a day. Patient No. 22, the medication was reduced to one tablet every other day as the pressure was thought to be too low; namely, 98/72 after three weeks, although there were no apparent side effects. This again was true with all the patients, in that no side effects were noted or reported.

As to the laboratory findings, there were no cases which showed frank anemia. Urinalysis was not remarkable. In a few cases a trace of one plus albumin was noted—but as the study went on, this cleared.

Much has been said and written about malignant hypertension. As stated in the "material and methods," darkroom examinations were made of the eyegrounds. If we follow the criteria of Keith, Wagener, et al,¹⁶ hypertension should be classified from mild to moderate depending upon the degree of retinal vessel changes and the severe or malignant degree upon the appearance of exudate, hemorrhage and angiospastic retini-

tis. Smithwick¹⁷ has devised a more complex classification. In this particular study, mild, moderate and severe was based not only on the eyeground findings, but also when pressures were in the range of 190 or above systolic and 120 or above diastolic. When or how the severe hypertension begins is still a matter of conjecture. This examiner has noted for a number of years that the Negro goes along for years with blood pressures at extremely high levels with no apparent symptoms. True, the retinal vessels show sclerotic changes and compression at the arteriovenous crossings. But, the grade IV of Keith or Smithwick is seldom seen except at the crisis point where there is either sudden renal failure, cardiac failure or a terminal C. V. A.

An example of this is in case No. 27. This patient had been seen for several years with a history of "high blood pressure." He suddenly went into a malignant stage during his week of non-medication. (He was, however, on Acetylanid® 0.1 mg. daily). He was admitted to the hospital, and on bed rest, Ser-Ap-Es® and diuretics did fairly well for two days. His blood urea nitrogen on admission was 90 and in one week had risen to 140. On the second week small exudates were seen in each eye, as well as small areas of hemorrhage. His edema had been controlled by two Ser-Ap-Es® daily, together with guanethidine. However, the patient became disoriented and demonstrated a complete left bundle branch block with normal sinus rhythm. The prognosis in this case was poor, and the patient expired on the sixteenth hospital day.

We should like to point out that the more severely affected hypertensives who seem unaffected by the triple combination may require the addition of a fourth highly effective agent—guanethidine^{10*}. Probably the most significant advance in the control of hypertension has been the introduction of guanethidine.¹⁰ This drug demonstrates a gradual and prolonged action in the more severe

*Later three tablets per day.

*Ismelin® (CIBA)

forms of hypertensive. Apparently, guanethidine acts on the post-ganglionic sympathetic fibers. Although this agent has been known to produce side effects, they have been minimal and not of serious nature in our hands. In our studies, the side effects may have been minimal because high dosages were not considered necessary nor were they prescribed. In looking over the work of other investigators, unwarranted side effects may have been a result of overdosage. Moreover, its combination with the above diuretic apparently reduces its side effects and enhances its results.

SUMMARY

Forty-six patients with arterial hypertension were taken off all hypotensive drugs for a period of seven to 14 days. They were then started on a weekly medication of reserpine-hydrochlorothiazide. After five weeks, they were taken off this medication for one week and started on reserpine, hydrochlorothiazide and hydralazine hydrochloride. Those patients who did not show a favorable response to just reserpine-hydrochlorothiazide, were given the additional hydralazine hydrochloride.

It was found that the reserpine-hydrochlorothiazide was a useful combination for mild hypertension. However, the addition of hydralazine hydrochloride was most effective in all degrees of hypertension in the cases studied. High dosage was not necessary to control moderate to severe grades of hypertension. There were no obvious side effects. One patient with malignant hypertension succumbed.

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LIPOMA OF THE CECUM

A Case Report And Review Of Literature

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The first comprehensive report on lipoma of the colon was made in 1909 by Stetten,¹ who reported 21 cases and reviewed 77 cases of lipoma of the gastrointestinal tract found in medical literature at that time. Forty-one of these cases were located in the large bowel. In 1947, when Pack and Booher² reviewed the literature, 153 cases had been reported and they added two more. Hayes, Burr, and Melton³ reviewed the literature to middle of 1958, and found 254 cases of subcutaneous lipoma of the large bowel. The following is a typical case history of subcutaneous lipoma of the cecum encountered at the North Alabama Hospital.

This 42 year old, white male was admitted to North Alabama Hospital on August 29, 1962, with history of indigestion of approximately six months' duration. This came usually after meals or with meals and was located in the upper abdomen. He had some cramping in the right lower quadrant. The upper abdominal pain was relieved somewhat by alkalis. There had been no weight loss. Three months prior to admission, he passed dark, red stools for three successive days. Following this, the bowel movements became normal. There were no other changes in his bowel habits. Past history was not contributory to his present illness, and family history was non-contributory. On physical examination, the positive physical findings were

limited to the abdomen. The patient was a slightly obese, heavy-set type of person. His blood pressure was 130/70. There were no masses palpated in the abdomen. There was no significant tenderness. There was a thick panniculus present. Except for bilateral relaxation of the inguinal rings, the rest of the physical examination was not remarkable. A complete gastrointestinal work-up revealed a filling defect in the cecum on two occasions. This was located in the region of the ileocecal valve. The upper gastrointestinal X-rays were within normal limits. Hemoglobin was 13.9 grams with a hematocrit of 43. Admission urinalysis was within normal limits.

Because of the filling defect in the cecum found on barium enema on two occasions, the patient was explored. At the time of operation, the cecum was opened and a polyp measuring 4.5 centimeters was found in the cecum at the ileocecal valve, posteriorly and medially. There was a one centimeter ulceration over the tip of the polyp. The base measured an inch and a half in diameter. The polyp was excised but when the cecotomy was closed, it was felt that the patency of the ileocecal valve was compromised and that there was a possibility of obstruction. Because of this, an ileocolostomy was accomplished. Post-operatively, the patient did well. The pathological report revealed a pedunculated lipoma of the colon.



DISCUSSION

Although lipomas of the colon are relatively rare and little has been written about this condition, it is the second most common benign tumor of the colon. The adenoma is the most common benign tumor of the colon. Submucous lipomas of the colon occur usually in middle to late years and are about evenly divided according to sex. The most common site is the ascending colon, with the sigmoid next.

The symptoms may be very vague. The most important symptoms are due to obstruction or intussusception. The other symptoms usually consist of flatulence, colicky pains, eructation, constipation and occasionally diarrhea. There is, occasionally, nausea. There may be superficial ulceration, bleeding, and resulting anemia. Intussusception occurs in about one-third of the cases.

Submucous lipomas are the most common of the lipomas and comprise about ninety per cent of the lipomas. The subserous lipomas

originate from the appendices epiploicae and comprise ten per cent.

Diagnosis is by suspicion at the time a barium enema is done since the symptoms are usually unreliable. Lipoma must be differentiated from adenoma of the colon, which is less translucent and has a more rough surface. The lipoma is smooth and very translucent due to the fat being more translucent. Air trapped in the colon may be confused with a lipoma. One author¹ suggested the use of water as a contrast medium and had good results with this examination. A lipoma will not produce infiltration of the bowel as does cancer.

Treatment is entirely surgical. Where the lipoma occurs in the rectum within proctoscopy range, they may be removed from below. Otherwise, opening of the colon and excision of the lipoma is recommended. In case of intussusception or, as in the case reported above, occasionally a segment of bowel has to be removed.

SUMMARY

A case of lipoma of the cecum has been reported with a review of the literature.

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The Low Incidence Of Major Non-Septic Pulmonary Embolism In Subacute Bacterial Endocarditis

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I have maintained in previous publications that chronic and repeated infections (specifically tuberculosis and leprosy and excluding virus infections), acting as non-specific foreign protein stimuli, alter plasma proteins—leading to an in vivo hypocoagulable state of the blood and a beneficial effect on the incidence of thrombotic and atherosclerotic disease. These plasma protein alterations consist generally of elevation of globulins (including fibrinogen) and lowering of albumin. The Rokitsky-Duguid-Astrup thrombotic theory of atherogenesis is ac-

cepted.* Minutiae of how this desirable effect may be produced will not be speculated on here beyond saying that surely one should think in terms of augmentation of the natural processes by which blood is kept fluid within the body.

Subacute bacterial endocarditis is an example of a chronic bacterial infection occurring in a situation in which a common mode of death is congestive heart failure, the prime

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*Premenopausal women, a group enjoying a relative immunity from coronary disease, on average have higher sedimentation rates than men. This is probably largely due to subtle differences in the plasma proteins of the sexes. An elevated sedimentation rate is characteristic of tuberculosis and leprosy and so another interesting and perhaps meaningful relationship exists between these groups displaying low incidence of coronary disease.

predisposer to pulmonary embolism. A study of the incidence of major non-septic pulmonary embolism in necropsied cases with necropsy evidence of congestive heart failure was carried out. 140 cases between the ages of 30 years and 88 years with an average age at time of death of 52 years were collected from 14 large teaching hospitals in the U. S. A. and Canada. Major non-septic pulmonary embolism occurred only four times for an incidence of 2.9 per cent. A control group of 143 consecutive necropsied cases of rheumatic valvular heart disease without bacterial endocarditis showed major pulmonary embolism in 23 cases for an incidence of 16.0 per cent. Ages in this group ranged from four years through 87 years with an average age of 39 years.

One bias in the investigation is that the control group, although on average younger than the study group, probably was exposed to congestive heart failure longer than the study group. On the other hand anemia, a predisposing factor in intravascular clotting, is common in subacute bacterial endocarditis. The bleeding tendency and intolerance to anticoagulants found in this disease is added evidence that the clotting and fibrinolytic mechanisms are altered.

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DIVERTICULITIS OF THE COLON

With Particular Reference To Definitive Surgery and Rehabilitation

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and

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One of the most difficult problems in the surgical management of diseases of the colon is diverticulitis with its many complexities. Nearly two decades ago Wayne Babcock succinctly stated: "Diverticulitis of the colon is the one disease of an intra-abdominal organ characterized by a tendency to persist or relapse with perforation, peritonitis, abscess, fistula or intestinal obstruction." He championed resection rather than medical measures and delayed operation rather than palliative surgery. The intervening years have evidenced clearly the merit of this philosophy.

The purpose of this presentation is to record our experience with diverticulitis and to illustrate the rationale for early surgical intervention in uncomplicated diverticulitis as well as for the mandatory surgical treatment of complications.

Material and Data

The material for this clinical study of diverticulitis was obtained from the private

records of a series of private patients treated between September, 1940 to August, 1962, inclusive. During this time, 307 patients with diverticulitis (diverticulosis excluded) came under our observation. There were 141 men and 206 women. The ages ranged from eight years to over 85. While the majority of cases of diverticulitis occur during the sixth and seventh decades it is not unusual for the disease to manifest itself in patients who are in their twenties and thirties (Table I).

Table I.

Distribution of Patients According to Age:
Authors' Cases

Age	No. of Patients
1-20	1
21-30	5
31-40	19
41-50	40
51-60	112
61-70	89
71-80	34
81-85	7
Total	307

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During recent years our concepts of treatment have been altered materially. Prior to 1948 about 30 per cent of our patients underwent resection and by 1950 this type of operation had increased to 35 per cent. By 1955 the

number of resections was calculated at 46 per cent and a recent review of our cases revealed that in 73 per cent of cases of diverticulitis resections have been performed. Of the 307 patients with diverticulitis, 221 were operated upon. There were 35 emergency operations with two deaths, a mortality of 5.7 per cent (Table II). These included procedures such as transverse colostomy for obstruction and incision and drainage of pelvic or lumbar abscess. One patient developed a severe thrombophlebitis after drainage of a pelvic abscess and did not return for further surgical treatment. The remaining patients had subsequent operations of a definitive character.

Table II.

Emergency Operations In Diverticulitis

Operation	No. of Patients	Deaths	Mortality Rate (%)
Transverse colostomy for obstruction	14	1	8.2
Transverse colostomy and drainage of abscess or perforation	14	0	—
Incision and drainage of pelvic or lumbar abscess (without colostomy)	7	1	1.4
TOTALS	35	2	5.7

Five patients with diverticulitis underwent exploratory celiotomy without additional procedures. Carcinoma of the pancreas was found in one, carcinoma of the sigmoid colon with peritoneal carcinomatosis in the second, carcinoma of the liver in the third, and carcinoma of the rectosigmoid with hepatic metastases in the fourth. The fifth was a frail elderly patient who complained of recurrent episodes of left lower quadrant abdominal pain. On exploration the sigmoid was found to be bound with adhesions and since the diverticular process did not appear to be severe the adhesions were lysed and the abdomen closed.

Definitive Surgery

Resection, either segmental resection or subtotal colectomy, some with partial cystectomy and hysterectomy was performed in 181 patients with two deaths, a mortality of 1.1 per cent. In this group there were 250 procedures as shown in Table III.

Table III.

Definitive Operations

	No. Patients	Total No. Procedures	Deaths	Mortality
Primary resection	128	128	2	1.5
Primary resection with partial cystectomy	9	9	0	0
Colostomy, colon resection, partial cystectomy, closure of colostomy	10	30	0	0
Colostomy, colon resection, partial cystectomy, hysterectomy, closure colostomy	2	6	0	0
Colostomy, colon resection, hysterectomy, closure colostomy	1	3	0	0
Preliminary procedure and resection	19	40	0	0
Resection of colon and cutaneous sinus	5	13	0	0
Resection (Bloch-Mikulicz)	7	21	0	0
TOTAL	181	250	2	1.1%

Complicating Factors

In cases of chronic diverticulitis the most frequent complication in our experience has been stricture of the lumen of the colon and fistula formation. Stricture is the result of prolonged, low-grade, recurrent inflammatory processes which lead to extensive peridiverticulitis and pericolicitis, fibrosis, and scarring. In most cases diverticulitis with a radiographic diagnosis of stricture formation but without obstruction can be resected satisfactorily in one stage without colostomy.

If the stricture has progressed to the point of producing total or near-total obstruction of the colon, it has been our policy to perform either a preliminary or a concomitant transverse colostomy. In many instances the obstruction has an acute onset and an emergency transverse colostomy must be performed. Frequently, in this stage of diverticulitis, it is impossible to distinguish between diverticulitis and carcinoma. While there is no relationship between carcinoma and diverticular disease this coincidental occurrence is sufficiently frequent to warrant resection as early as possible after the diagnosis of stricture is made.

Fistula or sinus formation follows perforation of an inflamed diverticulum with abscess formation. Localized abscesses may become walled off or may extend to adjacent viscera, abdominal wall, or peritoneal cavity with a resulting fistulous tract. Fistula formation frequently presents a difficult problem in surgical management and the selection of the proper operation for each patient is extremely important.

Table IV.

Sigmoidovesical, Sigmoidouterovesical and Sigmoido-uterine Fistulas

Number of patients.....	22
Males	18
Females	4
Sigmoidovesical fistulas.....	19
Sigmoido-uterovesical fistulas	2
Sigmoido-uterine fistula	1
One-stage resections.....	11
Multiple-stage resections	11
Mortality	0

Sigmoidovesicle fistulas present a different surgical problem. Formerly it was our custom to perform a transverse colostomy as the initial stage, a segmental resection of the sigmoid colon with partial cystectomy and suprapubic cystostomy as the second stage, and closure of the colostomy as the third stage. More recently suprapubic cystostomy has been omitted although an indwelling

catheter is left in place for a minimum of 14 days. In this series there have been 22 patients with sigmoidovesicle and/or sigmoido-uterine fistulas. There were 18 males and four females. Of the latter a hysterectomy had been performed in one and two had sigmoidouterovesicle fistulas.

In the cases of diverticulitis complicated by fistulas and sinuses three cases of chronic small bowel fistulas were encountered. In each of these, primary colon resection with concomitant small bowel resection was instituted without complications or sequelae. Four patients presented cutaneous sinuses. Two of these were tracts from the colon to the lumbar area and two to the anterior abdominal wall. In each of these cases a three stage procedure was instituted. This consisted of a preliminary colostomy, colon resection and excision of sinus tract, and subsequent closure of colostomy. Postoperative courses were uneventful.

Case Reports

Case 1: A 44-year-old man noted the passage of gas during urination in November 1951. Examination revealed a sigmoidovesical fistula for which a transverse colostomy and suprapubic cystostomy was performed. On examination in January 1952, a fistula was demonstrated on the posterosuperior wall of the bladder. Resection of the sigmoid, including the fistula, and partial cystectomy was performed on January 17, 1952. On January 28, the anastomosis was visualized radiologically and the colostomy was closed. The patient was discharged on February 7 after an uneventful convalescence and he has remained well.

Case 2: A 59-year-old woman was admitted with a history of frequent, small, loose stools of three months' duration. Evacuations were preceded by moderately severe crampy pains in the lower abdomen. For one month prior to admission the patient noticed seepage of feces from the vagina during the early morning bowel evacuations. There were oc-

casional smears of fresh blood on toilet tissue. Slight urinary frequency had been present.

Proctologic examination revealed a large, hard, rounded mass in the cul-de-sac, which was thought to be connected to the uterus. Proctosigmoidoscopy revealed several small adenomas. Barium enema X-ray studies showed an obstructing lesion of the midsigmoid.

On November 3, 1959, exploratory celiotomy was performed and a large inflammatory mass with multiple abscesses was found involving the midsigmoid, the fundus of the uterus and the posterior wall of the bladder. A fistulous tract ran from the sigmoid through the uterus into the posterior wall of the bladder. The abscesses were drained, the bladder fistula was excised, a suprapubic cystostomy was performed and a transverse colostomy was made in the right upper quadrant of the abdomen. The postoperative course was uneventful and the patient was discharged on November 13.

The patient was readmitted on January 31, 1960. The suprapubic cystostomy tube had been removed previously and the wound was healed. On February 4, sigmoidectomy, hysterectomy and bilateral salpingo-oophorectomy were performed. The postoperative course was uneventful and, after visualizing the anastomosis radiographically, the colostomy was closed on February 19. The patient was discharged on March 1. Since then she has felt well, has gained ten pounds and enjoys normal bowel function.

Case 3: A 62-year-old woman had known of her diverticular disease for seven years. There had been occasional mild episodes of lower abdominal discomfort. In October 1959 the patient experienced sharp pain in the lower abdomen which was followed by drainage of pus from the vagina. Drainage persisted for 15 days and ceased spontaneously. No fecal matter had been noted in the discharge. In January 1960 the patient was again having lower abdominal pain, but there was no further vaginal drainage. Examination disclosed abdominal tenderness in

the suprapubic area and a mass was palpable. Proctosigmoidoscopy was negative except for sharp angulation at the 17 cm. level. Pelvic examination revealed a firm, globular, tender mass in the cul-de-sac. Barium enema X-ray studies showed diverticulosis with irritability of the sigmoid flexure.

The patient was admitted to our department on January 11. She had fever and abdominal pain and tenderness became more marked. Exploratory celiotomy was performed on January 16 and a large pelvic abscess was encountered. The sigmoid was fixed to the posterior wall of the fundus of the uterus. The abscess was drained and a transverse colostomy was performed. The postoperative course was uneventful and the patient was discharged on January 28. She was readmitted on March 4 and reported that a week or so previously she had an episode of lower abdominal pain which was treated with antibiotic agents by her local physician. Surgery was again performed on March 7 and another abscess was encountered. This abscess and the adjacent inflammation involved the sigmoid, the right posterolateral area of the uterine fundus, the right Fallopian tube and the appendix. Many adhesions were lysed, the abscess was drained bilaterally and an appendectomy was performed. Uneventful convalescence followed and ten days later sigmoidectomy, hysterectomy, and salpingo-oophorectomy were performed. The transverse colostomy was closed on March 31. The patient was discharged from the hospital in good condition.

Coexisting Diverticulitis and Neoplastic Disease

The incidence of simultaneously occurring diverticular disease and tumors of the large intestine probably is difficult to assess correctly. Increasing attention is being allotted to the problem of diverticular disorders and the coexistence of these lesions is being increasingly recorded. Of 181 patients with diverticular disease in whom resection had

been performed, coincident benign and neoplastic pathology was present in 55 instances. In this group, 36 were benign polyps and 19 were carcinomas. Diverticulitis, cancer and adenomatous polyps in the same resected specimen was demonstrated in seven. The oldest patient in this group was 78 years of age; the average age was 61. As in the diverticular group, the peak incidence fell between the sixth and seventh decades of life which demonstrates that in general age is of no assistance in making a differential diagnosis between simple diverticulitis and diverticulitis with associated neoplastic disease. The youngest patient was 41 years old—the only patient under 50 years of age. Of the total series, 63 per cent were males.

Radiologic examination with astute interpretation appears to be the most reliable tool for diagnosis. Although usually it confirms the presence of diverticular pathology, 46 per cent of the carcinomas and 39 per cent of the adenomas in this series were initially discovered by sigmoidoscopic examination. In addition, five tumors were found on opening the operative specimen. Four diagnostic impressions ultimately proved to be incorrect. Three of these patients thought clinically to be instances of diverticulitis later at operation were found to harbor a malignancy. In the fourth patient multiple inflammatory changes with a superimposed polyp was wrongly suspected of being a large carcinoma. A total of 68 operative procedures were carried out in this group of patients.

In at least eight instances the presence of a polyp in an area of diverticular changes turned what might have been a transcolonic polypectomy into a resection, thereby ridding the patient of a diseased portion of bowel which may in the future have been the seat of a hazardous inflammatory complication. In two cases an adenomatous polyp recurred after transcolonic polypectomy. With the onset of diverticulitis before the appearance of the second tumor, bowel resection not only removed the inflammatory condition, but also ablated a segment of colon which had displayed a tendency toward neoplastic trans-

formation. Coincident pathology was found to exist in the same area of intestine in 16 instances and it is particularly in these circumstances that errors in diagnosis and therapy can be greatest. Distortion from an intraperitoneal abscess and vaginal fistula in two cases was so extensive that malignancy was not recognized until the microscopic tissue slides were read by the pathologist.

Helpful Adjuncts in Surgery For Diverticulitis

In the surgery of diverticulitis there are technical factors which are of assistance. In many instances the scarring and chronic inflammatory reaction produces a situation in which extensive abdominopelvic dissection may be extremely difficult and hazardous. To avoid damage to the ureters during dissection, ureteral catheters are introduced prior to operation. The reassurance of being able to identify the ureters by palpation and the resulting negligible incidence of ureteral damage has more than justified this procedure.

When preliminary concomitant colostomy is necessary complete fecal diversion should be obtained. This may be achieved satisfactorily with a transverse colostomy in the right upper quadrant of the abdomen. Cecostomy is unsatisfactory for fecal diversion. When bowel infection is present daily instillations of antibiotic solutions into the distal loop of the colostomy are employed. Following resection of the diseased portion of the colon the transverse colostomy is not closed until the anastomotic site has been visualized radiographically. Usually on about the tenth day following resection a thin suspension of barium is introduced into the distal loop of the colostomy to insure the patency of the lumen and the security of the anastomosis.

Many factors are important in the rehabilitation of patients with diverticulitis. The advent of antibiotics has played an important role in decreasing the extent of the inflammatory reactions. This in turn has effected an

increase in the number of cases selected for one stage operative procedures. There is a definite trend toward the avoidance of repetitive attacks, in a large measure due to our medical colleagues for their primary care and subsequent sound advice urging early or prophylactic resection.

The incidence of complications continues too high but should not be construed to represent the only indications for surgery. While one stage operations can and should be employed more frequently even when certain complications are present, multiple stage operations should be chosen when the patient's condition or the security of bowel continuity might be jeopardized with a one stage procedure. One must select carefully the best operative procedure for each patient individually, if good results are to be obtained.

Rehabilitation

Every surgeon is concerned with the return of his patient to his job and useful activity after surgical therapy. The true evaluation of any surgical procedure or method of management can be based only upon the rate of rehabilitation of the patients subjected to such therapy. In this series of 181 resections there were two hospital deaths. Patients have died with concomitant carcinoma and eight are lost to follow-up. Three patients complain of periodic abdominal distress. Nevertheless, they are performing their occupational duties. One patient is convalescing after a secondary resection. Besides the two patients who died during operation, those who died of carcinoma (seven patients), those lost to follow-up (eight patients), and the patient who is convalescing, there remain 160 patients who are well and completely rehabilitated. This represents a rehabilitation rate of 98.1 per cent (Table V).

Many factors are important in the rehabilitation of patients with diverticulitis. The advent of antibiotics has played a role in decreasing the extent of the inflammatory

Table V.

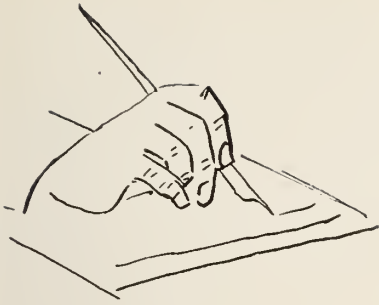
Diverticulitis—Rehabilitation (September, 1940 to August, 1962)

No. of resections.....	181
Operative deaths.....	2
Patients dead with associated cancer.....	7
Patients lost to follow-up.....	8
Patients convalescing.....	1
Patients currently followed.....	120
Patients with periodic distress.....	3
Patients symptom-free and rehabilitated.....	117
Rehabilitation rate.....	97.5 per cent

reactions. This in turn has effected an increase in the number of patients selected for one-stage operative procedures. There is a definite trend toward the avoidance of repetitive attacks, in a large measure because of the primary care given by our medical colleagues and their subsequent sound advice urging early or prophylactic resection.

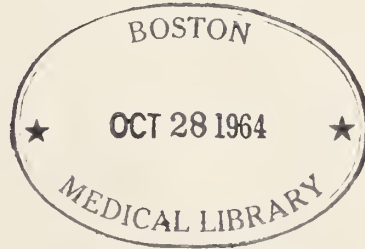
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Guest Editorial....

Editorials



AMPAC AND THE FREE ENTERPRISE SYSTEM OF MEDICAL PRACTICE

It is a fact that many members of the medical profession feel that it is only a matter of time until medical practice will be controlled completely by the federal government and that any resistance is futile. Fortunately, this is not the viewpoint of the leaders of organized medicine.

Three years ago the Board of Trustees of the American Medical Association endorsed the formation of a Political Action Committee named AMPAC, which has as its sole aim the election of candidates to Congress who believe in the preservation of the free enterprise system.

AMPAC, in turn, has organized a chapter in each state; and on July 22, 1962, representatives of AMPAC met with a group of Alabama doctors in Montgomery and organized ALAPAC. Officers were elected, a constitution and by-laws were adopted, and types of memberships with dues for each were determined. It was also decided at this initial meeting what portion of the membership dues would be sent to the national office and what portion would be kept in Alabama. All decisions were made by members of ALAPAC. The members of AMPAC were present only in an advisory capacity.

It was pointed out that money spent in political campaigns on a national basis would

go further in achieving our purposes if it were limited to Congressional campaigns of a marginal nature. In 1962, no money was spent in our state for political purposes.

An analysis of the Congressional elections on a national basis in 1962 shows AMPAC was 70 per cent successful in the candidates who were supported.

On June 9, 1963, ALAPAC was reorganized in Alabama. The state was divided into eleven areas, and the following doctors were appointed to serve on the Board of Governors to represent each of these eleven areas:

E. E. Camp, M. D., Huntsville
Quincy Ray Johnson, M. D., Gadsden
T. J. Payne, Jr., M. D., Jasper
Julius Hicks, M. D., Birmingham
John A. Edwards, Jr., M. D., Anniston
Claiborne Blanton, Jr., M. D., Selma
H. Gordon King, M. D., Tuscaloosa
James O. Colley, Jr., M. D., Troy
S. W. Windham, M. D., Dothan
Arthur A. Wood, M. D., Mobile
Richard A. Harris, M. D., Montgomery

It should be of interest for you to know who is serving on AMPAC Board of Directors:

Donald E. Wood, M. D., Indianapolis, Indiana, Chairman

George Lawrence, Jr., M. D., Flushing, New York

M. Vaun Adams, M. D., Mobile, Alabama

Frank C. Coleman, M. D., Des Moines, Iowa

John B. Farley, M. D., Pueblo, Colorado

Mrs. Frank Gastineau, Indianapolis, Indiana

Gunnar Gundersen, M. D., LaCrosse, Wisconsin

Milford B. Hatcher, M. D., Macon, Georgia

Blair J. Henningsgaard, M. D., Astoria, Oregon

Malcolm C. Todd, M. D., Long Beach, California.

Each of the doctors on the national level is a sincere, earnest, private practitioner interested in the preservation of the free enterprise system of medical practice.

In 1962, ALAPAC led the nation in per doctor contribution to AMPAC; however, only 490 of the members of our State Medical Association joined. With all of the other state PACS becoming more enthusiastic, it will take considerably more participation by our membership if Alabama remains in the forefront in this effort to prevent bureaucratic control of medical practice.

If we as doctors wish our profession to remain in the category of the free enterprise

system, we are the ones who must preserve it. No one else is going to do this for us. Our collective efforts through ALAPAC and AMPAC have already made an impression. If we are unanimous in supporting our State Political Action Committee, it can go a long way in making our influence felt. Membership in ALAPAC is an insurance policy, at a small annual premium, on the future of our profession. I am told that a member of a Jackson, Mississippi, union is asked to pay \$304 annually in membership dues; and he is told if he doesn't pay it he will be assigned a graveyard shift. Certainly we have more to preserve than a member of a union; and besides, ours is on a voluntary basis.

ALAPAC and AMPAC are only interested in candidates campaigning for election. After an election, contacts with the elected Congressmen is the responsibility of the legislative committees of organized medicine.

All is not lost even if it is later than you think. Join ALAPAC today and strengthen your faith in the belief that the free enterprise system can be preserved.

S. BUFORD WORD, M. D.
Chairman, ALAPAC

The Ten Best in Medicine

We hear about the ten best books, the ten best plays, the ten best dressed, and the ten most wanted men. What are the ten outstanding developments in the medical world?

1) The Hippocratic Oath, the code of ethics generally sworn to by those who receive the degree of Doctor of Medicine.

2) Ligature or tying a vessel to prevent hemorrhage.

3) Discovery of quinine used in the treat-

ment of malaria, the first important specific in therapy.

4) Edward Jenner's discovery of smallpox vaccination.

5) Discovery of the bacterial origin of disease by Pasteur.

6) Antiseptic and aseptic surgery and obstetrics, as advocated by Joseph Lister.

7) Discovery of transmission of disease by insects.

- 8) General and local anesthesia.
- 9) Diphtheria antitoxin.
- 10) William Conrad Roentgen's discovery of the X-ray

To set down a list of ten-best is to invite argument. In truth, there are so many important discoveries and techniques in medi-

cine, a list of ten cannot contain them. The antibiotics, penicillin, polio vaccine, heart-lung machines, heart and brain surgery are all great advances. And the new specialty of space medicine will help to make space travel possible. (Pennsylvania Medical Society: *Your Health*, April 19, 1963).

EMERGENCY MEDICAL IDENTIFICATION

The nation's doctors, through the American Medical Association, today announced a new universal symbol which will tell anyone rendering emergency care to a person who is unconscious or otherwise unable to communicate that its wearer has a special physical condition requiring special attention.

The symbol may be displayed on a wristlet, an anklet, a medallion around the neck or elsewhere. The symbol will be a sign that there are vital medical facts on a personal health information card in the bearer's purse or wallet or on an alerting device.

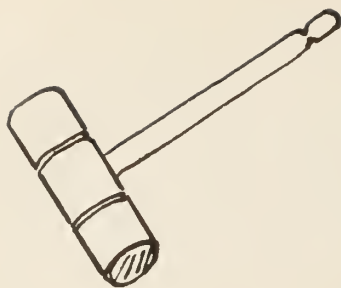
Dr. Carl Potthoff of Omaha, Nebraska served as chairman of the AMA's Committee

on Emergency Medical Identification during its two years of conferences and studies.

The symbol is a hexagon-shaped emblem containing a six-pointed figure, or sign of life. Superimposed on the figure is a staff with a snake entwined about it—the staff of Aesculapius, the insignia of the medical profession.

The symbol will be used by many individuals. Diabetic coma, for instance, sometimes makes its victims appear intoxicated, and treatment may be dangerously delayed. The symbol also could indicate allergies to antibiotics, such as penicillin, and many other physical problems.





President's Page



As one moves along through life, he comes to realize that there are certain rules and regulations of conduct which will need re-evaluation. This re-evaluation must be based upon the results of the past, the circumstances of the present, and the uncertain demands of the future. When one has done this, he can feel pretty secure in the conclusions arrived at relative to the value of ordinances which have been guides for men's activities through a generation or more.

This evaluation study is something every professional man should make, not for the purpose of needless criticism but for the purpose of making whatever changes might be indicated so that he can more adequately function as a servant to society through his professional activities.

Since 1875 the health standards of the people of Alabama have been protected by the specifically trained and legally licensed physicians of the State, acting as a Board of Health set up by statutory act of the Legislature. The basic laws setting up this unique system have been broad enough and expansive enough to meet all problems arising in the field of health care so far. They have been elastic enough to adjust properly to the demands and circumstances of each decade. They have been productive enough to withstand the attacks of all who sought to change them to a more cosmopolitan and political complexion. They have been popular enough to command the respect, admiration, and envy of many in other states who were administering health care to their people.

Unfortunately, however, all these attributes have not prevented a continuation of desires and political attempts to abolish the existing system, and to set up "something else." The "something else" would be what is called a more comprehensive board with less medical authority and more lay influence and control. It is difficult to understand how diluting the substance would increase effectiveness.

During the last several months these change-seekers have been awfully busy trying to justify their contention that to abolish and reconstitute this purely all-professional Board would bring about better individual care and higher standards of health for all citizens in our state. They are almost completely ignoring the significance and value of those physicians who have been rendering this service so willingly and gratuitously.

As one sits in on discussions of this nature, he is persuaded to believe that "something else" is not the answer. Changing the personalities on the Board of Health cannot increase the availability nor competency of the professional people who are the only ones who can deliver these health care services.

Out of all these deliberations, both pro and con, there has come a common and undivided decision which spells out the correct answer to any endeavor having to do with health care in any state—that of sufficient funds to do the job successfully. That one fact has handicapped all activities under the present set up and will prevent any system from accomplishing its real goals. Changing personalities on a Board does not create new resources.

The saddest experience one has had during these various discussions has been a discovery of the fact that too many members of the Medical Association of the State of Alabama

know so little about the details and importance of this Committee of Public Health in this State. Unless the majority of its members know and appreciate this set up, how can we expect to combat successfully the encroachments of political power-seekers? We must review our Constitution and By-laws, alert every member to action, and inform the general public as to who, what, and how these services are being rendered.

One recognizes that changing circumstances, brought about by the passing of time and modern discoveries, will necessarily demand an adjustment in procedures through which to meet the current problems. After many years of experience in this business, one is also aware of the fact that needed changes can be made within the framework of the present system.

This "Incomparable" Alabama plan is a heritage that should not be discarded. It has stood the tests of time and proved itself worthy.

Every doctor in Alabama should let it be known that abolishment of this plan will not solve any problems. Such actions would only magnify and intensify them. The only thing needed now to get increased health care services is sufficient hard cash with which to operate more adequately the machinery now existing.

Lest we forget, now is the time to stand up and be counted.

J. S. Daves, M.D.



around the state



at the



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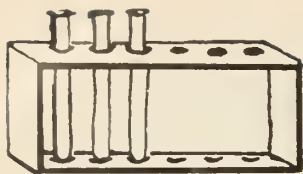


postgraduate



assembly





STATE DEPARTMENT OF HEALTH

PROGRESS REPORT ON A NEW NURSING SERVICE

The home nursing service program in Alabama evolved as a result of the Federal Community Health Services and Facilities Act of 1961. Certain provisions of this act were designed to stimulate improvements in out-of-hospital services to the chronically ill and aged.

So that improvements may be effected, the act provides that State Health Departments can receive federal funds for establishing and expanding out-of-hospital services for the chronically ill and aged. Federal assistance can also be received by public and non-profit agencies for experiments, studies, and demonstrations of new methods of providing hospital services.

It has been determined that some patients' hospital stay could be shortened if a home nursing service were available. Others can make better recoveries in their own home environments. Therefore, a plan for a home nursing service program was Alabama's immediate response to the provisions of this new law. The objective of this program is to provide nursing service to patients who do not need care in a hospital or nursing home.

The service that is available is not limited by disease, age, or financial status. The public health nurse can make only one visit to a patient unless he is under medical care. With the doctor's approval and written orders, the public health nurse will then make a limited number of visits to the patient until she has taught a responsible member of the family how to give the patient the proper nursing care.

Reports are sent to the physician after each visit. The types of services rendered so far are catheterizations and bladder irrigations; range of motion exercises (for stroke and arthritis patients); crutch walking; dressings;

bed baths; enemas; and instructions to diabetics in diet and urine testing.

Before the program was begun, it received the approval of the county health officers and county medical societies of the counties in which the program was initiated. The counties selected to participate in this program were chosen on a basis of their need determined by population, number of hospitals and medical personnel.

A home nursing service program was inaugurated in nine counties. Funds from the Community Health Services Act provided for the employment of one extra nurse in each of eight of these counties. By means of a special grant, Tuscaloosa County has added three staff nurses, an assistant supervisor, and a clerk to the home nursing service program. All nurses in the participating counties carry on the traditional public health nursing program and all take part in the home nursing program.

A consultant nurse was added to the State nursing staff to act as coordinator for the program. Institutes on rehabilitation and other subjects concerning care of the chronically ill have been held for the nurses. All nurses and health officers of counties which participate in the program are oriented by the State staff.

The program has progressed from the initial nine counties participating to a total of fourteen counties offering the home nursing service. More counties are making plans to participate.

Physicians have been co-operating in this new program. The service is only as effective as each physician wishes it to be for he is the final judge as to who should receive the service, the kind of service to be rendered, and the length of the need for such a service.

DEPARTMENT OF HEALTH

BUREAU OF LABORATORIES

Thomas S. Hosty, Ph.D., Director

June 1963

Examinations for intestinal parasites.....	216
Typhoid cultures (blood, feces, urine and other).....	235
Brucella cultures.....	0
Examinations for Malaria.....	7
Examinations for gonococci.....	1,577
Serologic tests for syphilis (blood and spinal fluid).....	23,053
Agglutination tests.....	0
Darkfield examinations.....	3
Examinations for diphtheria bacilli and Vincent's.....	22
Examinations for Negri bodies, smears and animal inoculation.....	201
Water examinations.....	2,594
Milk and dairy products examinations.....	3,988
Examinations for tubercle bacilli.....	3,311
Miscellaneous examinations.....	3,869
Total.....	39,076

BUREAU OF PREVENTABLE DISEASES

W. H. Y. Smith, M. D., Director

CURRENT MORBIDITY STATISTICS

1963

	May	June	*E. E. June
Tuberculosis.....	102	124	188
Syphilis.....	116	137	154
Gonorrhea.....	345	367	310
Chancroid.....	1	3	5
Typhoid fever.....	2	0	2
Undulant fever.....	0	0	1
Amebic dysentery.....	2	6	2
Scarlet fever and strep. throat.....	77	61	37
Diphtheria.....	0	0	2
Whooping cough.....	3	8	55
Meningitis.....	6	6	6
Tularemia.....	0	0	0
Tetanus.....	3	6	2
Poliomyelitis.....	0	1	5
Encephalitis.....	0	0	1
Smallpox.....	0	0	0
Measles.....	305	69	362
Chickenpox.....	160	23	71
Mumps.....	45	24	53
Infectious hepatitis.....	46	50	26
Typhus fever.....	0	0	1
Malaria.....	0	0	0
Cancer.....	734	743	529
Pellagra.....	2	0	0
Rheumatic fever.....	20	9	8
Rheumatic heart.....	18	31	19
Influenza.....	174	30	48
Pneumonia.....	211	167	164
Rabies—Human cases.....	0	0	0
Pos. animal heads.....	1	3	0

As reported by physicians and including deaths not reported as cases.

*E. E.—The estimated expectancy represents the median incidence of the past nine years.

BUREAU OF VITAL STATISTICS

Ralph W. Roberts, M. S., Director

PROVISIONAL BIRTH AND DEATH STATISTICS, AND COMPARATIVE DATA, MAY 1963

Live Births Deaths Causes of Death	Number Registered During May 1963			Rates* (Annual Basis)		
	Total	White	Non- White	1963	1962	1961
Live Births.....	5,383	3,466	1,917	18.8	21.4	21.6
Deaths.....	2,502	1,604	898	8.7	9.0	8.5
Fetal Deaths.....	120	58	62	21.8	22.9	21.6
Infant Deaths—						
under one month.....	127	74	53	23.6	21.7	19.4
under one year.....	171	92	79	31.8	30.8	30.0
Maternal Deaths.....	5	2	3	9.1	8.0	3.2
Causes of Death						
Tuberculosis, 001-019.....	24	12	12	8.4	6.3	10.3
Syphilis, 020-029.....	4	1	3	1.4	0.4	2.1
Dysentery, 045-048.....	1		1	0.3		
Diphtheria, 055.....						
Whooping cough, 056.....						0.7
Meningococcal infec- tions, 057.....					0.7	
Poliomyelitis, 080, 081.....	1	1		0.3		
Measles, 085.....	1		1	0.3	0.4	0.7
Malignant neoplasms, 140-205.....	353	262	91	123.3	118.1	117.6
Diabetes mellitus, 260.....	34	13	21	11.9	14.5	12.8
Pellagra, 281.....	1	1		0.3	0.7	0.4
Vascular lesions of central nervous sys- tem, 330-334.....	352	216	136	122.9	128.0	113.6
Rheumatic fever, 400- 402.....	2	1	1	0.7		0.7
Diseases of the heart, 410-443.....	858	568	290	299.6	310.0	292.1
Hypertension with heart disease, 440-443.....	117	49	68	40.9	53.2	51.6
Diseases of the arteries, 450-456.....	54	34	20	18.9	27.9	18.2
Influenza, 480-483.....	8	1	7	2.8	2.5	3.2
Pneumonia, all forms, 490-493.....	49	28	21	17.1	22.2	24.6
Bronchitis, 500-502.....	4	3	1	1.4	1.8	1.4
Appendicitis, 550-553.....	2	2		0.7	0.4	1.1
Intestinal obstruction and hernia, 560, 561, 570.....	13	7	6	4.5	6.3	6.4
Gastro-enteritis and colitis, under 2, 571, 0, 764.....	4		4	1.4	2.5	2.8
Cirrhosis of liver, 581.....	9	7	2	3.1	8.1	6.4
Diseases of preg- nancy and child- birth, 640-689.....	5	2	3	9.1	8.0	3.2
Congenital malforma- tions, 750-759.....	26	16	10	4.8	3.5	4.6
Immaturity at birth, 774-776.....	43	17	26	8.0	6.4	6.7
Accidents, total, 800- 962.....	168	113	55	58.7	59.6	59.8
Motor vehicle acci- dents, 810-835, 960.....	77	52	25	26.9	25.4	23.5
All other defined causes.....	363	238	125	126.8	130.8	118.6
Ill-defined and un- known causes, 780- 793, 795.....	123	61	62	43.0	31.4	33.8

*Rates: Birth and death—per 1,000 population

Infant deaths—per 1,000 live births

Fetal deaths—per 1,000 deliveries

Maternal deaths—per 10,000 deliveries

Deaths from specified causes—per 100,000 population

The Woman's Auxiliary

Dear Doctors:

An exciting time was had by all in Atlantic City which hosted a wonderful convention, as attested to by many on the distaff side of the families. The first Sunday evening's entertainment in Convention Hall was tops. A strange feeling comes over one who sits in that huge hall surrounded by men, nearly all of whom are physicians.

The two musical groups on the AMA programs on different nights came up with the peppiest, most marvelously melodious, and enjoyable offerings to thrill one's very being. The sight and sound of the Winged Victory Chorus parading in step and song and bearing the flag through the audience will not be quickly forgotten by any who experienced it. The harpist proved most popular at the Sunday evening concert. I surely was glad to be a doctor's wife and to be invited to these events.

We were all proud of the whole Edward Annis family, many of whom were at the convention. The installation address made us all thankful to have so beautifully articulate a member of the medical profession assuming the post of presidency. I had the nicest opportunity to visit with Mrs. Annis—when I was seated next to her at the Sunday luncheon honoring the Auxiliary Board of Directors and many thanks to Louise Thuss for the courtesy. Mrs. Annis seems perfectly capable of managing a family of eight children and a husband who must be on the go most of this year. She makes a wonderful anchor for a wonderful family.

Now, back home, it is time to go over copious notes, sort out recommended projects, and get advice from Dr. J. G. Daves and our advisory committee on what to stress here. This will occupy many summer days already too full. My family reminded me that this was my anniversary—not quite that of our nuptials; so I wondered what sort. It turned



out to be one week since we had told the medical auxiliary story on educational TV. Louise Thuss and Belle Chenault (national first vice-president in charge of membership, did you know?) ably reviewed the national scope. Eloise Crenshaw, president of the Jefferson-Birmingham Auxiliary, gave the county accomplishments; and I gave the state. It was a most enjoyable evening with Dr. W. G. Thuss, Sr., proving an able movie critic. As one member of the Auxiliary's advisory committee, he will probably be delegated to be in charge of advice on the multitude of films available from the AMA, as well as many other important matters. We feel that the Auxiliary story could well be told on the radio, also. SERVE and COMMUNICATE is the theme for the year as announced by the new national president, Virginia Stoltz. What better way is there to communicate than by radio and TV? Of course, there is the phone also. Each wife, I suspect, keeps the telephone busy; and we hope that sometimes she is talking about Health Careers Clubs, helping line up immunization personnel, advertising AMA-ERF and other worthwhile Auxiliary projects.

Yours for better service and communication,

Marlys R. Sutton

J. M. A. ALABAMA

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September 1963

No. 3

ABDOMINAL PAIN IN CHILDHOOD*

James Marvin Baty, M. D.

Abdominal pain is one of the most common complaints in childhood. And it is an important symptom for many reasons. If the complaint is neglected when it is due to organic conditions such as appendicitis and intussusception, complications are apt to occur which threaten the life of the child. On the other hand, if too much is made of abdominal pain which does not have an organic basis, complications of an emotional nature may result. The physician must be constantly alert in handling children with abdominal pain not only to all of the possible explanations for their symptoms but also to the individual child and its particular environment. Children react in vastly different ways to what appears to be similar stimuli, and there is a tremendous difference in the reaction of parents to the various complaints of their children. These reactions of parents to illness are intriguing and may give important clues that are helpful in understanding the children in particular situations. The occurrence of serious illness in relatives or close friends is alarming enough so that parents may be much more or less concerned over any com-

*From the Department of Pediatrics, Tufts University School of Medicine, The Boston Floating Hospital for Infants and Children and the Children's Clinic of the Boston Dispensary.

THE CHILDREN'S HOSPITAL

1601 SIXTH AVENUE, SOUTH, BIRMINGHAM 5, ALABAMA

HARRY C. SHIRKEY, M. D.
DIRECTOR

April 3, 1963

Mr. W. A. Dozier
Executive Secretary
Medical Association of the State of Alabama
Montgomery, Alabama

Dear Mr. Dozier:

It was nice to talk to you concerning the lecture of James Marvin Baty, a local Alabamian who gave the first annual Lectureship in honor of Dr. and Mrs. Alfred A. Walker, who were so active in the Medical Association of this state as well as the American Medical Association. As you remember, Dr. Walker was the spearhead of this hospital, and it is most appropriate that a lectureship be provided for the memory of this great team of the Doctor and his wife. At the lecture, it was pointed out that Dr. Alfred Walker was the first Professor of Pediatrics in the Medical College of Alabama, and the University had given him an honorary Doctor of Science degree previously.

It seems appropriate that we asked Dr. Baty, who was a friend of Dr. Walker's, to come back to Birmingham to give this first lecture. We look forward to a continuing group of distinguished Americans in this capacity, and shall be pleased to share with the other people of the state the material which is brought in honor of Dr. and Mrs. Walker.

We respectfully submit the lecture for the consideration of you and Dr. Smith for our Journal.

Kindest personal regards,

Yours most sincerely,

Harry C. Shirkey, M. D.

plaint by their child at such times than they might be at another.

Table one gives a list of the conditions which may be the cause of abdominal pain. This is almost like the table of contents of a textbook and we will not discuss each of these conditions individually in detail. But, I would like to cite instances of some of them in an effort to present my philosophy of handling the child with abdominal pain. I plan to discuss this problem from the point of view of the practitioner as well as that of the diagnostic hospital. Having been associated with such a hospital for over 30 years and having been engaged in a general pediatric practice at the same time, I am aware of the difference in the problems as they present in the two settings and the variations in the approach which are necessary in order to understand them.

The main consideration facing the practitioner when a child complains of abdominal pain is whether or not the condition is an acute one which may require surgical correction or medical observation and treatment. Acute appendicitis is the most common condition in this category and must be kept in mind at all ages although it occurs more frequently in older than in younger children. When appendicitis is suspected, the child should be kept under close supervision so that the findings can be re-evaluated frequently until the issue is settled. Ideally, such a child should be in the hospital for observation but not necessarily for immediate operation. We have come to feel that emergency operation is indicated very rarely in children with acute appendicitis and that the course will be less stormy and fewer mistakes will be made if a few hours are allowed after arrival in the hospital before the operation is done. During this period there is time for the completion and evaluation of certain laboratory procedures and repeated examination of the child. There is no evidence that the patient suffers from a brief delay such as this and we believe it is actually beneficial.

TABLE 1

ABDOMINAL PAIN

INTRA-ABDOMINAL CONDITIONS

GASTROINTESTINAL TRACT:

- Appendicitis
- Peptic Ulcer
- Malrotation
- Duplication
- Intussusception
- Volvulus
- Meckel's Diverticulum
- Intestinal Polyps
- Mesenteric Cyst
- Diaphragmatic Hernia
- Other Hernias
- Constipation
- Parasites
- Enteritis
- Colitis
- Regional Ileitis
- Tumors

URINARY TRACT:

- Anomalies
- Infections
- Calculi
- Tumors

LIVER:

- Infectious Hepatitis
- Cholecystitis
- Cholelithiasis

PANCREATITIS

PERITONITIS

ADENITIS:

- Mesenteric
- Iliac

MESENTERIC VEIN THROMBOSIS

EXTRA-ABDOMINAL CONDITIONS:

- Pneumonia
- Pleurisy

SYSTEMIC DISEASES:

- Epilepsy
- Rheumatic Fever
- Sickle Cell Anemia
- Leukemia
- Splenomegalies

ALLERGY

COLIC

PSYCHOGENIC:

- Psychosomatic

One of the systemic diseases which may mimic acute appendicitis at the onset is acute rheumatic fever. I have personally known four children on whom an emergency appendectomy was performed at the onset of their disease. These were done by fine surgeons in children's hospitals, two in our own, and at the beginning of the operation there was no question in the mind of anyone involved about the diagnosis. Nevertheless, the operations might have been avoided in each instance by a brief period of observation and more careful evaluation.

On the other hand, the child suspected of having acute appendicitis must not be allowed to go without frequent observation because of the danger of progression of the process to rupture and peritonitis. The younger the child the more apt the appendix is to rupture and the less well the child is able to localize the process. In this context I always remember a little girl I was called to see when I first began practice. I do not recall the details of her story or findings, but I thought she probably had early acute appendicitis. The mother was obviously not too convinced by the young doctor she had never seen before and refused to take the child to the hospital for observation with only a questionable diagnosis. She assured me that she would call if the child continued to complain. By the time she did call me the next day the appendix had ruptured. Although the child recovered, I have always felt that her protracted illness might have been avoided. In retrospect I thought that I should have compromised with the mother and revisited the child later the same day. The diagnosis should have been clearer by that time and the mother should have been willing to take the child to the hospital with a more definite diagnosis.

Another child taught me a different lesson about abdominal pain which I have never forgotten. Johnny had been brought to see me on several occasions over a period of about two years because of abdominal pain. Each time examination was entirely normal, and I assured him and his mother that there was

no evidence of appendicitis or other condition about which they should be concerned. One day I was visiting his sister for a minor respiratory infection when through the window I saw Johnny, now about seven, coming home from school. He was walking slowly, with a limp, the right thigh being kept slightly flexed—obviously guarding the right abdomen. When I asked his mother how long he had been complaining and wondered why she had not called, she admitted that it had been about two days. Johnny was operated on that afternoon and made a rapid and complete recovery following the removal of an acutely inflamed, swollen appendix. There is no reason to believe that there was any connection between the episodes of abdominal pain which this youngster had had previously and his attack of acute appendicitis. The previous episodes had been so much more dramatic that when the real thing occurred with grumbling, persistent pain in the right lower quadrant, the mother was not worried. Since that episode, I have always warned parents of children who have attacks of unexplained abdominal pain that although the episode under question is innocuous, complaints of abdominal pain in the future cannot be ignored. Each such episode must be evaluated at the time it occurs since the child may develop an acute condition at any time.

One of my most fascinating experiences with abdominal pain was with a little girl who had also had several attacks of pain over a period of about a year which were unexplained. She was brought to my office one afternoon when she was about eight years old because of vague, intermittent, mid-abdominal pain for four or five days and persistent pain for two hours. After examining her and performing a urinalysis and leucocyte count, I thought that she had acute appendicitis and sent her directly to the hospital. During the next few hours the pain and tenderness disappeared, her temperature and leucocyte count returned to normal and we decided to observe her overnight. On arrival in the hospital the next morning I was greeted by one of our psychologists who

asked me what was wrong at Ann's house. I knew of nothing unusual and of course wondered why she should ask. She had been visiting with Ann that morning, getting acquainted, and asked her to draw a picture of a house. She was startled by the coldness of the house Ann drew—it had no chimney! We were at a loss to interpret this until shortly afterwards when Ann's mother called me before I had an opportunity to report to her about Ann's condition that morning. She wanted to tell me that she was not at home but was staying at her mother's because she and Ann's father had had a squabble the night before. We decided that the family problems probably accounted not only for Ann's drawing of a house but also her recurring attacks of abdominal pain. The family worked out their difficulties, Ann has done very well and is now a senior in college. She did, finally, have her appendix removed at fifteen years when a hemorrhagic cyst of the right ovary precipitated the operation. The appendix appeared normal and microscopic examination showed no acute or chronic inflammatory changes.

These three experiences cited are excellent illustrations of the important role the mother plays in childhood illness. The physician will always have a better understanding of the child patient if he is able to find out something about the feelings and concerns of the mother.

Many children complain of abdominal pain who have no disease or abnormality to which the pain can be attributed. These children have interested us for years and as a group have constituted one of our most baffling diagnostic and therapeutic problems. Every year a number of such youngsters are admitted to our hospital for evaluation and about ten years ago we carried out a study over a three-year period of 42 of them. We reported our findings before a meeting of the American College of Gastroenterology in October, 1957 and I would like to present them to you with the recent follow-up reports.

These children, who came to The Boston Floating Hospital because of unexplained, recurrent abdominal pain, were studied by the members of the Medical and Psychiatric Services working together and concurrently. In addition to the procedures which are done regularly on all hospitalized children, the medical investigation included X-ray examination of the gastrointestinal and urinary tracts of all these patients and any other special studies such as an electroencephalogram which seemed indicated in the individual instance. The psychiatric evaluation included interviews with the child and with the parents, testing and observation of the child on the wards and in the playroom of the hospital. Before sending the child home a final conference was held by the psychiatrist and pediatrician with the family and the child, and the findings and recommendations were transmitted to the child's physician.

Muriel, who came to the hospital at the age of six and one-half years, is illustrative of the group to be discussed. She was referred for investigation because of recurring attacks of abdominal pain.

Her family consisted of her mother and father, nine and one-half year-old sister and an 11-month-old brother.

The father was a tall, handsome man with a soft face and somewhat helpless attitude who appeared to be sensitive and introspective. He had had pains similar to his daughter's as a little boy, particularly when he felt unhappy and frustrated. About two years previously there was question of his being drafted into the Army. After this was settled, the company where he worked promoted him to a responsible job for which he did not feel adequate. During this period he gradually developed epigastric symptoms which "he kept to himself," and finally a bleeding ulcer requiring hospitalization for ten days. Following this he returned to work in a less responsible position and had remained essentially well.

The mother was pretty and very tidy, a little bit too prim. She seemed to be sincere,

well meaning and quite defensive. She had been taken to the hospital in an ambulance because of a miscarriage when Muriel was four years old.

It was difficult to get realistic information about the child's early history as the mother obviously confused actual occurrences with what she had read in books and magazine articles on how to bring up children. She had been physically well but emotionally upset and unhappy during the pregnancy with Muriel as they were living with her mother with whom she did not get along well. The delivery had been a difficult breech and she had received very little anesthesia. While she was in the hospital another woman's baby born by breech delivery had died.

Muriel was bottle fed. The mother said that there had been no feeding problems but was reminded by the father of spitting up after feedings and many formula changes. Later she became a fairly good eater but was always "picky." There were no training problems.

The parents described Muriel as a little girl anxious to please who was not aggressive and who seemed to be upset by aggressive behavior of others. She had very few playmates and preferred to play alone. She had many fears such as fear of the dark and fear of poverty. For about five months she had been waking in the middle of the night and getting into her mother's bed. The mother, father, and infant brother slept in one bedroom while Muriel and her sister slept in the other.

Muriel had been well and had had no illnesses except rare mild respiratory infections. About ten months previously (shortly after the birth of her brother) she began to complain occasionally of abdominal pain but she appeared well and nothing was done about this. She started to school about six months before coming to the hospital. On the first day in school she became acutely ill with fever, abdominal pain and vomiting and was found to have acute tonsillitis from which she recovered rapidly on antibiotic therapy.

After this illness she returned to school and was thought to be well and happy. She then began having occasional episodes of abdominal pain during which she would appear pale and lay on the couch curled up without being restless, for about an hour. The attacks occurred only during the day and were not thought to be related to her diet, meal time, or activity.

At the time of the illness a tonsillectomy had been planned for about two months later. Her father returned from the hospital where he had been treated for his bleeding ulcer just a couple of days before Muriel had to go to the hospital for her operation. She made a quick recovery and again returned to school but began having the attacks of abdominal pain more often so that she had to stay home or was sent home several days each week. She seemed unhappy at missing school and the attacks occurred during the weekends as well as on school days.

Nothing abnormal was found on physical examination and complete medical investigation. Muriel was an intelligent, attractive, polite, and carefully controlled little girl. She was poised and obedient on the ward and in the playroom and showed no outward sign of insecurity or tension but her eyes betrayed her anxiety. She seldom looked into one's face, and talked about her father, blood, and operations and said she did not know what was cut out when she had her tonsil operation. She also spoke of her fear of the dark.

It was felt that her pain was psychogenic and before she went home her physicians, including the psychiatrist, discussed the problem fully with the parents.

They and Muriel were assured that she was healthy and that there was no physical abnormality to account for her pain. The father was told that his fear that his ulcer might be hereditary and be the cause of his daughter's pain was ungrounded. During the discussion the parents, being reassured about Muriel's physical condition, seemed to understand and were able themselves to relate the occurrences of the past two years to the de-

velopment of her anxiety and tension which finally found expression in abdominal pain.

It was suggested that Muriel be sent back to school immediately and that the parents and teacher, while being kind, should reassure her that her pain was not serious and not cause for staying home. Also, the sleeping arrangement in the home was changed so that the three children were put into the larger bedroom and the mother and father took the smaller one.

Muriel returned with her mother two years later for a followup interview. She had been fine and doing very well at home and in school. She had complained of abdominal pain a few times at the beginning of the next school year but each time was easily reassured and the pain had not recurred.

Muriel and her mother were interviewed six years after her hospital experience and again recently. She is now 16 years old, a lovely young lady of five feet, eight inches, and very well. She is an excellent student and plans to go to college. She does not engage in extra-curricular activities in high school but does date and seems to enjoy peer relationships. She is still a worrier but has had no recurrence of the abdominal pain and has had no other complaints except for menstrual cramps. The onset of her menses occurred at the age of twelve years.

Each of the 42 children included in this group had "complete" medical investigation and psychiatric evaluation while in the hospital. These studies revealed no evidence of disease or abnormality which might account for the symptoms. The children were all of normal intelligence and showed no signs of obvious personality disorder or emotional disturbance. A number of other children were studied medically in the clinic or the hospital because of unexplained recurrent abdominal pain during this same period. They were not included in this group because although some of them were seen once in consultation by the psychiatrist they were not evaluated thoroughly for various reasons. In some in-

stances there was not time for this but more commonly either the referring physician or the family did not desire psychiatric investigation.

All of these 42 children began to complain of abdominal pain between the ages of four and eight years, the majority at five or six years. Four of them were over the age of ten when they were studied but they had been having recurring episodes of pain for three or four years which were either not severe enough or had not created enough anxiety to precipitate hospitalization. During the same period a few children were investigated because of unexplained abdominal pain beginning in pre- or early adolescence. They are not included in this group because the mechanisms underlying the development of the symptom seem to be different.

Recurring attacks of abdominal pain were responsible for the hospitalization in all of these patients. The pain was localized in the periumbilical area by the majority of the children and in the epigastrium or across the lower abdomen by a few. One or two complained of pain in the right lower abdomen. The character and duration of the pain varied considerably in the different individuals and at times in the same child. It was dull most commonly but was described occasionally as being sharp. The pain was momentary in some instances but frequently lasted 15 to 20 minutes and rarely as long as an hour although some of the children said they had a more or less constant dull ache. The complaint frequently occurred in "attacks" lasting from one to several days alternating with periods of days to weeks during which the child was symptom free. The pain occurred at all times of the day and did not seem to be related to meals or individual foods. In only one instance did the child complain during the night and he apparently was not awakened by the pain. Vomiting occurred occasionally but more commonly the children expressed the fear of vomiting without actually doing so. There were no associated bowel or urinary symptoms.

Each of the children had been examined by their physicians during attacks of pain and several had had previous admissions to other hospitals for observation during which various procedures of investigation had been carried out.

The family history of these children is interesting because of a certain degree of consistency, in that there was a "pain climate." In each family one or more close relatives, frequently one of the parents, had been having pain of some sort for years. Pain attributed to ulcers and actual peptic ulcers, recurrent abdominal pain, abdominal operations, chest pain and frequent incapacitating headaches were most commonly encountered.

The personal history of these children revealed feeding difficulties in almost every instance during the first three months of life which did not interfere with normal gain in weight. There was excessive crying and most of them had what the parents described as colic. They were "spitters," vomiting small amounts of food frequently. And they had all had several changes in formula during this period. After this most of the children were described as "good eaters" and there were no particular problems.

Almost all of these children were characterized by their parents as worriers—they were worried about their school work, fear of failure, and about the family finances. They also had many fears, such as of the dark and of death.

The treatment of these patients consisted simply of reassuring the child, the parents, and the family physician. This was accomplished in part during the period of observation by telling the child and the parents that the tests were negative as they were done. After the investigation had been completed, a conference was held by the pediatrician and psychiatrist with the child and the parents during which the entire problem was discussed in detail. The purpose and results of the various procedures were explained and assurance given that there was no evidence of underlying abnormality which could be al-

tered by medical or surgical treatment. They were told that while the exact mechanism of the production of the pain was not understood, it originated in some way because of worry and tension and that even if the pain recurred from time to time (and that it probably would) that it should not cause concern or be allowed to interfere with the child's activities. The questions raised by the child and the parents were dealt with candidly and they were offered the opportunity to return for further discussion if the need arose. They were also advised to inform the child's school teacher of the hospital experience and recommendations.

The result of treatment in this group of 42 children was good as measured by short term follow-up. The abdominal pain became no problem in all instances except one after the hospital experience, either being mild and sporadic or disappearing entirely. Our one failure in the group was the young daughter of recent immigrants. They mistrusted the new culture and met everything, including the medical reassurance about the child's pain, with suspicion. Shortly after we sent her home, her appendix was removed in another hospital. The appendix was normal and the child continued to have attacks of abdominal pain for about one year after its removal. Five years later, however, when she was 12 years old, we found that this little girl had made an excellent adjustment, was doing very well in school, and was having no complaints.

At this time, about five years after this group of 42 children was originally studied in the hospital, interviews were obtained with 31 of the youngsters in addition to the little girl cited above. Their age range was nine to 19 years at this time. Abdominal pain had not been a problem with any of these children after their hospital experience although eight of them had complained of mild transient pain for a time. Sixteen of the children were thought to be well and healthy at the time of follow-up, they were doing well in school, and they had no complaints. The other 15 youngsters all had neurotic symptoms of one

sort or another including aches and pains although abdominal pain was no longer a prominent symptom. Several of this latter group were not doing well in school.

In an attempt at a ten-year follow-up recently, we have been able to contact only seven of the group. Five of these, including Muriel, are doing well, have had no operations, and do not have complaints. One girl, now 21, had two ovarian cysts and her appendix removed shortly after the previous follow-up notes and later had an operation for pains in her legs. She says she is well now except for occasional headaches. A boy age 18 who was doing well at the time of the last follow-up has been having unexplained headaches for the past two years and is not doing so well in school.

The abdominal pain which brought these children to the hospital for investigation was in each instance on a psychogenic basis. We do not understand the exact mechanism of its production but it seems to be relatively simple and largely the result of anxiety and

tension and may be precipitated by a number of different stress situations in the child's environment. The child feels pain and asks for help, needing reassuring support from his parents. The nature of the complaint, however, breeds anxiety in the parents. This in turn increases the child's preoccupation with himself and thereby the symptom is aggravated. The role of the doctor is to break this vicious circle which he is able to do with authoritative reassurance. In order to accomplish this, the physician must first be sure in his own mind that there is no organic disease to account for the pain; and secondly, he must have the trust and confidence of the family in order for the assurance to be accepted. The diagnostic procedures which may be carried out serve two purposes. First, they may be and often are necessary to rule in or out various organic causes of pain. Secondly, they corroborate the clinical opinion and supply acceptable and more tangible evidence which is useful in convincing the child and the family that there is no underlying physical disorder which is producing the pain.

CONFEDERATE STATES MEDICINE—ALABAMA'S ROLE

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Organization

The Confederate States Medical Department was created on February 26, 1861 by the Confederate States Congress while in session in Montgomery. The organization was formed around a nucleus of 24 medical officers who had resigned from the United States Army or Navy and who offered their services to the Confederacy. Three ranks of medical officers were designated: surgeon general, surgeon, and assistant surgeon. The surgeon general had the rank and privileges of colonel with pay at \$250 per month. Surgeons had the rank of major and a pay range of \$162.50 to \$200 per month, and assistant surgeons the rank of captain with a pay range of \$110 to \$150 per month. A fourth class, designated as "acting assistant surgeon," was comprised of private practitioners whose services were contracted for as needed and whose pay conformed to that of lieuten-

ant. The number of medical officers enrolled in the Confederate Army and Navy numbered 3,343, only 107 of whom served the Navy. The Confederate Government appropriated \$73,969,800 to the Army and \$1,716,500 to the Navy during the period of the war.

Dr. David C. DeLeon of Mobile, a former medical officer of the United States Army, was appointed Acting Surgeon General on May 6, 1861. Dr. Samuel P. Moore was appointed Surgeon General on July 30, 1861, and served in this capacity with distinction for the duration of the war. A native of South Carolina, born in 1812, Dr. Moore had served as a medical officer in the United States Army for 25 years. He was considered a stern but impartial and capable administrator who insisted on complete and carefully prepared records which were stored in a building adjoining his office in Richmond. Unfortunately, these buildings with their contents were destroyed in the great fire which occurred on the night of April 2, 1865. Along with the fire went any chance to secure complete factual information on the Confederate Medical Department. Present knowledge is based on duplicate records maintained by field and hospital medical officers stationed throughout the Confederacy.

This article, a condensation of a paper read at the annual meeting of the Alabama Historical Association, April 22, 1961, is based largely on the following sources: Records, Alabama State Department of Archives and History, Montgomery; H. H. Cunningham's "Doctors in Gray," and personal interviews.

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Morbidity and Mortality

The Union Army, with about 2,800,000 soldiers, lost 224,586 from disease and 110,070

from being killed or wounded. Of the approximately 600,000 men who served the Confederacy, it is estimated that at least one-third, or about 200,000, lost their lives. About 150,000 died from disease and about 50,000 were killed outright or died from wounds.

Diseases causing most deaths were typhoid fever (camp fever), estimated at 25 per cent of the total, pneumonia, measles, diarrhea and enteritis. Other leading causes of death were malaria, scurvy, tuberculosis and smallpox. Most deaths occurred during the first two years of the war and during this period measles was the leading cause of death. This was probably due to the crowding of men, most of whom came from rural areas, into hastily prepared camps.

Most battle wounds were caused by minie balls (named for the inventor, Capt. C. E. Minie of the French Army) fired from rifled muskets. The ball was conical in shape and weighed about an ounce. It had replaced the round ball and, traveling at a lower velocity of speed, caused a greater tearing of the flesh and shattering of bone. About 70 per cent of those shot in battle, who lived to reach a hospital, were wounded in the arm or leg, about 20 per cent in the torso, and ten per cent in the head or neck. Amputation was the usual treatment of wounds of the extremities and was done as soon as possible with chloroform being the usual anesthetic. Following the Battle of Shiloh on April 7 and 8, 1862, about eight out of ten soldiers undergoing amputation died due to delay. Certain regiments suffered high battle casualties. Forty-two had 50 per cent or more killed in single engagements. The first Texas regiment suffered 82.3 per cent casualties at the Battle of Sharpsburg. The highest recorded loss on either side was sustained by the First Minnesota Regiment with 85.5 per cent killed or wounded at the Battle of Gettysburg.

Hospitals

The first hospitals were converted homes, hotels, stores, churches, warehouses and barns. Usually they had been organized by

women's aid societies and were administered and largely supplied by them.

In March 1863, the Confederate Medical Department assumed authority over all hospitals and closed many. The types of hospitals were field, general, and wayside, the purpose of the last-named being to accommodate sick traveling soldiers. Several hospitals of this type were operated throughout the Confederacy and were located usually at railway junctions.

Field hospitals were located at points convenient to expected battle sites and were housed either in pre-existing structures converted to hospital use or in tents.

General hospitals were more permanent and were located at points distant from the fighting area. Some were constructed as hospitals by the government but most occupied pre-existing buildings. Virginia was first in the number of general hospitals located within its borders, Georgia was second, and Alabama third among the Confederate states. The largest hospitals were to be found in Virginia; the Chimborazo, located on Chimborazo Heights in Richmond, which was opened on October 11, 1861, being the largest military hospital on either side with 8,600 bed capacity.

Medical Supplies

Responsibility for securing, storing, and distributing medical supplies belonged to the Medical Purveyors Department and medical supply officers were stationed throughout the Confederacy. Supplies ranged from cots, bedding, and pots and pans, to surgical instruments, drugs, bandages, and crutches. They were manufactured in the Confederacy, obtained through the blockade, and sometimes captured from the enemy. Drugs in small quantities came in through Mexico and from the North during the entire period of the war.

Supply depots were established at Montgomery, Mobile and Demopolis, and pharma-

Montgomery Hospitals

Name	Location	Bed	Cap. Medical Officer in Charge
Madison	Perry and Main (Dexter Ave.) Streets	292	Surgeon C. I. Clarke
Concert Hall	Market (Monroe) and Perry Streets	250	Surgeon W. I. Hobbs
St. Mary's	Bibb and Commerce Streets	325	Surgeon J. H. Watters
Ladies	Bibb and Commerce Streets	265	Surgeon T. F. Duncan
Stonewall	North Court Street	300	Surgeon R. J. Talliaferro
Watts	North Court Street	250	Surgeon F. M. Hereford

Mobile Hospitals

Conti Street	Conti Street	140	Surgeon I. F. G. Payne
Moore	Royal Street	123	Surgeon W. C. Cavanaugh
Nott	Royal Street	35	Surgeon G. W. Nott
Levert	Government Street	40	Surgeon R. H. Redwood
Canty	St. Anthony Street	160	Surgeon William Henderson
Nidelet	St. Anthony Street	250	Surgeon L. L. Nidelet
Heustis	Not known	100	Surgeon J. M. Heard
Negro	Not known	156	Surgeon G. A. Moss

Others

Miller	Spring Hill (Mobile County)	150	Surgeon Goronway Owen
General	Point Clear	Unknown	Unknown
General	Greenville	100	Asst. Surgeon R. B. Maury
General	Selma (End of Alabama Street)	200	Surgeon W. Hurt
Wayside	Selma (Corner of Broad & Water Sts.)	100	Surgeon J. C. Curry
Officers	Uniontown	Unknown	Surgeon G. C. Gray
General	Marion	Unknown	Surgeon A. Russel Erskine
Wayside	Demopolis	Unknown	Surgeon H. Hinckley
General	Tuscaloosa	Unknown	Surgeon R. N. Anderson
General	Shelby Springs	350	Surgeon D. W. Brickell
Wayside	Talladega (Corner, Court & North Sts.)	Unknown	Surgeon G. S. Bryant
Conscript	Notasulga	Unknown	Surgeon U. R. Jones
Texas	Auburn	Unknown	Asst. Surgeon L. A. Bryan
Wayside	Eufaula	34	Surgeon H. M. Weedon
Prison	Cahaba	Unknown	Surgeon I. H. White

ceutical laboratories in Montgomery and Mobile. The laboratories manufactured a wide range of chemicals, drugs and medicinal substitutes from native herbs, barks and roots. Some of the chemicals and drugs produced were alcohol, silver chloride, chloroform, sulphuric ether, nitric ether, podophyllin resin, silver nitrate, sweet spirits of nitre, potassium iodide, blue mass and opium.

Alabama's Role

The first organized effort made in the South to care for sick or wounded soldiers is supposed to have been taken by the Ladies Aid Society of Montgomery on June 14, 1861.

A wayside hospital called "The Soldiers' Home" was established in the Bellinger Heights area of Montgomery in a recently constructed building donated by Dr. and Mrs. Carnot Bellinger. Having need for larger quarters, the Aid Society closed this hospital about April 1, 1862 and established the Ladies' Hospital in downtown Montgomery.

On January 1, 1865, twenty-nine Confederate hospitals were in operation in the state, including 24 general, four wayside, and one prison hospital located at Cahaba in connection with Castle Morgan, the prisoner-of-war camp located there. Hospitals that had been closed were the Soldier's Home in Montgomery and Buckner Hospital in Gainesville.

This hospital is supposed to be the first to regularly employ female nurses. The hospitals of the Tennessee Valley, located at Huntsville, Florence and Tusculumbia, had been forced to close due to enemy occupation.

Most of the Alabama hospitals were established in pre-existing buildings, in several instances hotels at Montgomery, Mobile, Point Clear, Demopolis, Shelby Springs, and Talladega. Howard College, at Marion, and The Methodist Conference College at Auburn, located on the grounds of what is now Auburn University, donated their buildings for hospital purposes. The Tuscaloosa hospital was housed in part of the present buildings of Bryce Hospital. The hospitals located at Greenville and Notasulga were constructed by the Confederate government. The Greenville hospital was built following a troop-train collision at Garland which injured and killed a large number of soldiers. The hospital at Notasulga was built to serve Camp Watts, a large training camp located there. A few of these hospital buildings are still standing, among which are the two buildings on St. Anthony Street in Mobile, which housed the Nidelet and Canty hospitals. The Nidelet was the former U. S. Naval Hospital and, following the war, was the Marine Hospital. The District VI Tuberculosis Sanatorium now occupies the building. The Canty Hospital was Mobile City Hospital before and following the war. The two buildings which housed the Selma hospitals are still standing. One, on the banks of the Alabama River, occupied by the wayside hospital, is now a store and office building, and the other was the Vaughn Memorial Hospital until 1961. The Eufaula hospital, formerly a tavern known as the Bailey House, still stands on the bluff facing the Chattahoochee River and is the oldest house in Eufaula.

Medical Personnel

The names of 395 medical officers who served in Alabama regiments and hospitals are recorded in the State Department of Archives and History. The records of 58 Ala-

bama doctors who served show that 56 were graduates of a medical school. Twenty-one had graduated from the University of Pennsylvania, 12 from Jefferson Medical College, and three from the University of New York. Twenty were graduates of nine Southern medical schools. When allowances are made for the lack of medical knowledge existing in 1861, the average Confederate medical officer was well trained. In the opinion of Dr. Hunter McGuire, Medical Director of General T. J. Jackson's army, the Confederacy had the finest group of military surgeons the world had known up to that time.

The following group of Alabamians occupied positions of importance in several branches of the Medical Department.

Dr. La Fayette Guild—Next to the position of Surgeon General, probably the most important was that of Medical Director of the Army of Northern Virginia. Dr. Guild, who was born in Tuscaloosa on November 23, 1835, was the personal choice of General Robert E. Lee for this position which he filled with distinction until the war ended. After the war he located in Mobile. In 1869, due to ill health, he moved to California and died in San Francisco in 1870.

Dr. James Fountain Heustis—A native of Alabama, born November 15, 1829 probably at Cahaba, and a resident of Mobile before and following the war, Dr. Heustis served as medical director of hospitals in the Department of the Gulf, which included East Louisiana, Mississippi, Alabama and Florida. He was stationed at Mobile. Dr. Heustis occupied a prominent position for many years as a teacher at the Mobile Medical College and as a practicing physician. He died in 1891.

Dr. Frank Hawthorne—Dr. Hawthorne, who was born at Belleville in Conecuh County on September 30, 1835, was a prominent organizer and administrator of hospitals, serving with the Army of Tennessee. In 1865 he went to London, England, where for two

years he was connected with St. Bartholomew's Hospital. Returning to New Orleans, he resumed his teaching career at Tulane University, which he had given up to enter the Confederate Army. His death occurred there in 1876. His nephew and namesake, Dr. Frank Hawthorne McConnico, is a retired physician living in Montgomery at an advanced age.

Dr. William Henry Anderson—Dr. Anderson, of Mobile, was the most prominent of that group of medical officers from Alabama representing the Medical Purveyors' Department. Stationed at Montgomery and serving as chief medical purveyor, he established the supply depots there, in Mobile, and in Demopolis. He also established pharmaceutical laboratories in Montgomery and Mobile for the manufacture of chemicals and drugs. A native of Virginia, born May 26, 1820, he located in Mobile about 1859, where he had a distinguished medical career before and following the war. He was a co-founder and teacher at the Mobile Medical College. His death occurred on November 14, 1887.

Dr. Elias Davis—Dr. Davis was one of the several Alabama doctors who chose to fight rather than administer to the sick and wounded. A native of Jefferson County, born March 7, 1833, he enlisted as a private in Company B., Tenth Alabama Regiment. Attaining the rank of major, he was killed in battle at Petersburg, Virginia, in 1864. Dr. Davis left two sons, Drs. W. E. B. and J. D. S. Davis, of Birmingham, who were prominent pioneers in the field of abdominal surgery around the turn of the century.

Charles Theodor Mohr—Mr. Mohr, a Mobile druggist, was one of the most able chemists in the South. Stationed at the Mobile pharmaceutical laboratory, he gave valuable service making medicines from native plants, manufacturing chemicals, and testing drugs coming through the blockade. Mr. Mohr was born in Wurtemberg, Germany, on December 24, 1824, and was educated at Stuttgart University. He operated his drug business in

Mobile until 1900 and died July 17, 1901, in Asheville, North Carolina. His son, Dr. Charles A. Mohr, was for many years, until his retirement in 1934, a physician of Mobile, teacher in the Medical College, and Mobile County Health Officer. His death occurred November 28, 1949.

Mrs. Juliet Opie Hopkins—Mrs. Hopkins and her husband, Judge Arthur Francis Hopkins, residents of Mobile, were among the wealthiest citizens in the city at the outbreak of the war. From early in 1861 to the end of the war, Mrs. Hopkins served the sick and wounded soldiers of Alabama in the hospitals in Virginia, often in the capacity of hospital matron. Estimates of her own resources contributed for medical supplies range from \$200,000 to \$500,000. Mrs. Hopkins was wounded at the Battle of Seven Pines, while assisting a wounded officer, which left her slightly crippled for the remainder of her life. A native of Virginia, born May 7, 1818, she died in Washington, D. C., on March 9, 1890, and is buried in Arlington Cemetery.

Miss Kate Cumming—Nursing as an occupation for women was practically unknown at the beginning of the Civil War. Public opinion demanded that men perform this service and disabled soldiers usually were assigned this duty. Alabama's most prominent representative of that small group of women who braved public criticism to supply nursing care to sick and wounded soldiers was Miss Kate Cumming. A member of a prominent Mobile family, she faithfully served as a nurse in hospitals connected with the Army of Tennessee from early 1862 to the end of the war. The end found her in a hospital at Griffin, Georgia, the surgeon in charge of which was a Dr. DeYampert, an Alabamian. Miss Cumming survived many dangers and hardships, often having to ride the countryside searching for food for her patients. She was born in Leith, Scotland, in 1835, was brought to Mobile by her father as a small child, and died in Birmingham, Alabama, on June 11, 1908, after a career of teaching and writing.

HIATAL HERNIA

Jasper D. Moore, M. D.

and

William E. Ehlert, M. D., F. A. C. S.

Selma, Alabama

Over the past five years, the surgical literature has been replete with many fine articles on hiatal hernia and peptic esophagitis. Probably because this is a rather frequent finding on routine X-ray of the upper GI tract accounts for the casual attitude of the medical profession toward this disorder.

It is known that hiatal hernia is the most common cause of reflux esophagitis. In fact, 50 to 60 per cent of symptomatic cases will present with symptoms of peptic esophagitis. We have the impression that physicians in general are not aware that hiatal hernia is second only to duodenal ulcer as the source of upper GI hemorrhage. It is our feeling that when the complications of peptic esophagitis,

namely: hemorrhage, ulceration and stricture formation, are considered, these cases should come to earlier surgery, but because these patients are first seen by the internist, generalist or otolaryngologist, we be-

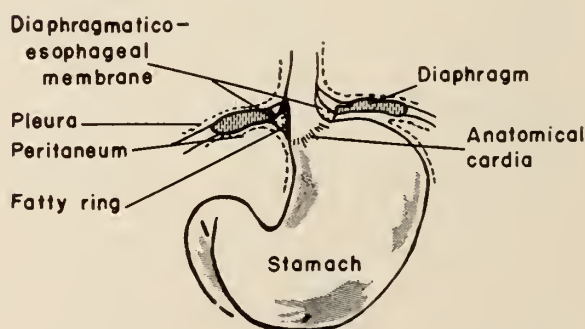


Figure 1

Dr. Moore was graduated from the Medical College of Alabama in 1953. He was a resident at Nassau Hospital, Mineola, New York. He is certified by the American Board of Surgeons. He is engaged in the practice of surgery in Selma, Alabama.

Dr. Ehlert was graduated from Tulane University in 1938. He is a general practitioner and surgeon in Selma, Alabama.

lieve the entire medical profession should be better apprised of this potentially serious disease. The majority of the patients are treated for many years for peptic ulcer, gallbladder disease, gastritis, nervous stomach,

A. Sliding (Short Esophagus)

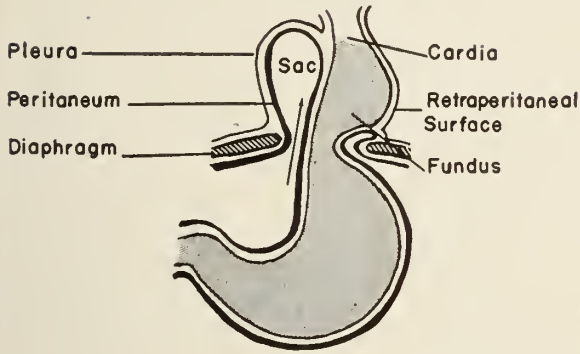


Figure 2

B. Parahiatal (Para-esophageal)

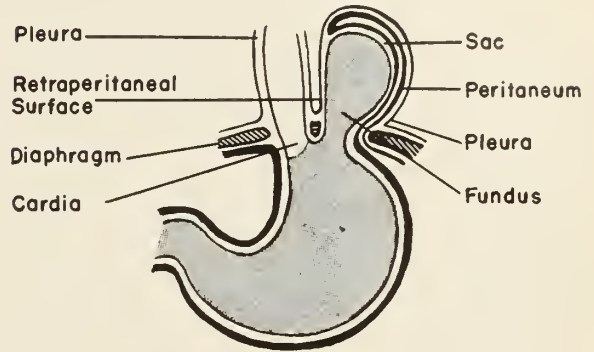


Figure 3

heart disease and pulmonary disease without considering the hiatal hernia in the differential diagnosis.

Classification: There are two main types of esophageal hiatal hernia; the sliding variety and the para-esophageal. Let us first review the normal esophago-gastric relationship.

Figure one shows the normal esophago-gastric relationship to the diaphragm. The muscular fibers forming the esophageal hiatus arise from L I, II, and III.

The right crus is mainly responsible for the integrity of the hiatus and its weakness is the cause of the abnormal esophago-gastric relationship.

The sliding esophageal hernia is the most common (85 to 90 per cent) and the one that produces reflux esophagitis. As can be seen when the esophago-gastric junction is above the diaphragm the sphincteric mechanism is destroyed and acid gastric juice can reflux the entire esophagus. The size of the hernia is not important because severe esophagitis can occur when no more than two to four centimeters of stomach projects above the diaphragm. This does not occur with the less common para-esophageal variety. It usually presents as an incarceration or the so-called "upside down stomach". The archaic term "congenital short esophagic" should not be used to identify the sliding variety. It should only be used to describe a true con-

genital condition or the "gastric lined lower esophagus" as shown by Barrett.

Symptoms: The majority of these patients are in the 4th to 6th decade of life. They usually give a long history of upper abdominal pain, sub-sternal distress, thoracic back pain, nocturnal regurgitation and dysphagia. Most of these symptoms occur following a heavy meal or when assuming the recumbent position. It is unfortunate that many of these same symptoms are taken to be produced by a diseased gallbladder. In the past, many normal gallbladders have been removed in hoping to correct this array of symptoms. More than a few patients have had their "bad heart" improve after repair of a hiatal hernia.

We also know today that any patient suffering with the peptic ulcer diathesis and possessing a sliding hiatal hernia is in a medical vacuum. The hiatus hernia will allow regurgitation of acid peptic juices into the esophagus causing the ulcer symptoms to be more severe. This causes one to wonder, if the two disorders are present, if they can be treated with success on a conservative regimen.

Treatment: The method of treatment has received considerable attention over the last few years. Our medical colleagues tell us they can treat the majority of hiatal hernia cases with anti-acids, anti-spasmodics, frequent small feedings, and elevation of head

of bed. We believe, as previously stated, that when a hiatal hernia becomes symptomatic, it should be treated as herniation in any other part of the body and repaired by surgical means. Allison and Sweet describe methods based on the anatomical defect in the diaphragm. More recently some surgeons are adding the newer peptic ulcer operations, namely vagectomy and pyloroplasty or antrectomy to the anatomical repair. We have performed twelve hiatal hernia repairs during the past year and believe each case should be individualized as to the method of repair. We also believe the approach, trans-thoracic or trans-abdominal should be individualized. We firmly believe that any patient suffering with peptic ulceration or who runs a high gastric acidity should have some type of ulcer operation performed along with the hernia repair. Of our cases, four have been performed with a trans-thoracic approach and eight trans-abdominally. We have never encountered any difficulty in reducing the hernia from below. All cases done below the diaphragm had, in addition, a bilateral vagectomy and pyloroplasty.

Comment: It is hoped that the entire medical profession will include hiatal hernia in consideration of any patient with upper abdominal complaints. If the hernia is symptomatic it should be repaired, for little can be accomplished on a medical treatment. All these patients should have a complete work-up including upper GI series, gallbladder study, gastric analysis and esophagoscopy if dysphagia or bleeding has been present. We know that cholelithiasis is present in 30 to 40 per cent and duodenal ulcer in ten per cent of patients. Four of our patients had undergone previous cholecystectomies without relief of their symptoms. If the patient presents with peptic esophagitis or high gastric acidity with or without an associated duodenal ulcer, a vagectomy and pyloroplasty or antrectomy should be performed. Because of the associated pathology we favor the sub-diaphragmatic surgical approach. Many surgeons today believe pylorospasm to be associated with the hernia and this was so with one of our cases.

A 78 year old patient with a large hernia and a second massive hemorrhage was repaired through the chest. She soon developed severe pylorospasm and did not attain relief until a pyloroplasty was performed. One might question if inadvertently a complete vagectomy had not been done at the time of esophageal surgery in which a gastric drainage procedure would have been in order. This we cannot be sure of, but the pylorus was hypertrophied at the time of abdominal surgery and the patient had not experienced gastric retention.

Summary: A review of the anatomical defects, symptoms, diagnosis, and treatment of hiatal hernia has been presented. A plea is made to include hiatal hernia in the differential diagnosis of patient with upper abdominal distress and earlier surgical repair of symptomatic cases.

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REPAIR OF VESICOVAGINAL FISTULA

H. Gordon King, M. D.

Tuscaloosa, Alabama

Vesicovaginal fistula is today a different type of fistula than was found during the time of Dr. J. Marion Sims' epic surgical repair. During Dr. Sims' period, the fistulae were due to traumatic and prolonged labor, and were usually located very low in the bladder, that is, between the interureteric ridge and the bladder neck or at the bladder neck itself. In our modern era of medicine, the greater majority of vesicovaginal fistulae arise from complications of pelvic surgery. These fistulae are much higher in the bladder, well above the interureteric ridge.

Repairs of vesicovaginal fistulae are still being done from the vaginal approach, and there are many excellent reports in the literature regarding transvaginal repair of vesicovaginal fistulae. In the last 10 or 15 years there has been a progressive number of articles appearing advocating repair of vesicovaginal fistulae from the abdominal approach, that is, transvesically and a combina-

tion of a transvesical and transperitoneal approach. Certainly, the majority of articles appearing in the urological literature favor the abdominal route, probably because most urologists are more "at home" in the bladder than in the vagina, speaking professionally of course.

Since being in practice I have seen a very small and modest series of vesicovaginal fistulae. All but one have been following pelvic surgery. This probably speaks well of the surgical practice in Tuscaloosa. In the repair of a vesicovaginal fistula, I prefer the transvesical approach. It affords excellent exposure and thus far has given 100 per cent results. A simple innovation in the surgical technique has "sold" me on the transvesical approach. It is this simple innovation that I would like to present. This technique is certainly not original with me, as it was being used on the urological service at Charity Hospital when I was a resident. This technique affords excellent exposure, even in the obese female. It allows for accurate excision of the fistulous tract, for dissection of two separate layers, and for accurate approximation of the two layers.

Dr. King was graduated from Tulane University in 1943. He is engaged in the practice of urology in Tuscaloosa, Alabama.

The technique is simply the use of a ping-pong ball inserted into the vaginal vault. It serves as a retractor and aids in dissection and suturing. First of all, a fairly heavy black silk suture is placed through and through the ping-pong ball and is secured with an ordinary button on the bottom side. This silk suture should be 12 to 18 inches in length. Before insertion into the surgically "prepped" vagina, the ping-pong ball and suture should be sterilized by cold sterilization, since the ping-pong ball will not tolerate heat sterilization. Just prior to surgery, cystoscopy is performed and a ureteral catheter is passed out through the fistula into the vagina and on out to the introitus. The black silk suture through the ping-pong ball is secured to the tip of the ureteral catheter, and then the ureteral catheter is drawn back through the fistula, bringing with it the suture and ping-pong ball. The ping-pong ball is then placed well into the vaginal vault with the button down. At this cystoscopy, visualization of the fistula in relation to the ureteral orifices can be made, and, if desired, ureteral catheters may be inserted into the ureters. We are now ready to proceed with the actual repair.

With the patient in the usual supine position, the bladder is opened extraperitoneally after the peritoneum has been reflected upwardly. Immediately upon opening the bladder the suture attached to the ping-pong ball can be grasped and pulled upward. This elevates the floor of the bladder well up into the incision. The relationship between the fistula and ureteral orifices can be identified. With traction on the suture, the floor around the fistula is "tented" over the ping-pong ball. The firm surface of the ball affords an excellent surface on which to excise the fistulous tract by sharp dissection. A Foley catheter inserted through the fistula has been used for the same purpose, but immediately you can see the disadvantage because the balloon does not afford a firm surface and, besides, you cannot cut right down on the balloon with a knife.

With the tract excised two or three millimeters all the way around, the vaginal layer and bladder layer become very prominent and can be separated very easily by sharp dissection. With the two layers separated for about one centimeter all the way around and well mobilized, the two layers may now be closed easily with fine chromic catgut sutures without any tension. Usually the layers close more easily in a transverse fashion. Hemostasis is not a problem during the procedure. With the floor of the bladder well elevated into the incision, the ping-pong ball makes an excellent "darning egg" on which to close the layers. The closure is carried out tightly around the heavy silk suture attached to the ping-pong ball, and when completed, the suture is cut off just above the line of closure. Just before the patient is taken from the operating table, the ping-pong ball is retrieved from the vagina.

Personally, I prefer to close the bladder, leaving a suprapubic catheter in place for about 10 days. Thereafter a Foley catheter is inserted into the urethra. I feel it is a disadvantage to have a Foley catheter in the urethra during the first 10 days because the inflated bag usually rests immediately over the suture line and might have some bearing on whether or not the suture line holds. After about 10 days a Foley catheter is placed through the urethra and the suprapubic catheter is removed. The suprapubic sinus will usually close water-tight in three or four more days. The urethral catheter is then removed, allowing the patient to void normally. The total postoperative period is approximately two weeks.

The female relieved of a vesicovaginal fistula is an ever grateful patient. Probably no patient is more appreciative, even considering the elderly male in acute urinary retention who has been relieved.

Summary: A brief resume of the surgical repair of vesicovaginal fistula is given, and a simple innovation in surgical technique for the repair of a vesicovaginal fistula is presented.



Editorials

MEDICAL PROGRESS ASSEMBLY

A speaking faculty of 30 distinguished physicians will present latest developments in a broad range of medical subjects as the Sixth Annual Medical Progress Assembly convenes in Birmingham, October 6-8.

Alabama physicians are invited by General Chairman John M. McMahon, M.D., to join with an expected 800 who will attend one of the South's fastest-growing postgraduate medical educational meetings.

Lecture subjects will include arthritis, cardiology, diabetes, endocrinology, gastroenterology, medicine, neurology, obstetrics-gynecology, pathology, pediatrics, radiology and surgery. The Assembly has been accepted for 15 hours of Category I credit by the American Academy of General Practice.

Special entertainment events have been planned for both physicians and their wives. The program will open with a reception and buffet at the Tutwiler Sunday evening. Other social activities will include a dinner and dance at Vestavia Country Club Monday evening and a luncheon and fashion show for the doctors' wives. Door prizes will be awarded and refreshments will be served during breaks for viewing technical exhibits.

The Assembly is sponsored by the Birmingham Academy of Medicine, comprised of 160 younger specialists, with the co-operation of the Jefferson County Medical Society and the Alabama Academy of General Practice.

New features this year will be pre-Assem-

bly programs on arthritis and diabetes to which everyone is invited. Also there will be seminars on specialized subjects in addition to the Assembly's general sessions.

Indicative of the renown of this year's program speakers are: Dr. Richard J. Bing, professor of medicine, Wayne State University, Detroit, "Coronary Reserve, What it is and How to Measure It"; Dr. Isadore Snapper, director of medicine and medical education, Beth-El Hospital, New York, "What is New in Hyperparathyroidism"; Dr. Edward T. Peter, department of surgery, Medical School, University of Minnesota, "The Use of Gastric Freezing in the Treatment of Duodenal Ulcer"; Dr. John A. Spittell, Jr., Mayo Foundation, "The Use of Vascular Clues in Diagnoses"; Dr. Champ Lyons, Medical College of Alabama, Dr. Frank Glenn, Cornell, "Infection as Related to Newer Antibiotics"; Dr. F. A. Simeone, Western Reserve University School of Medicine, "The Autonomic Nervous System"; Dr. Snapper, "Clinical Pathological Conference"; Dr. Judson Van Wyk, University of North Carolina School of Medicine, Dr. Robert F. Shaw, Massachusetts General Hospital, Dr. Harry C. Shirkey, The Children's Hospital, Birmingham, and Dr. James A. Pittman, University of Alabama Medical Center, "Thyroid Diseases in Children"; Dr. William Blakemore, chairman, department of surgery of the Graduate School of Medicine, University of Pennsylvania, "Surgical Treatment of Hypertension."

EDUCATIONAL PROGRAMS IN NURSING AND RELATED CAREER OPPORTUNITIES

The members of the AMA Committee on Nursing believe it is fundamental to an understanding of nursing and its problems that physicians have some knowledge of the differences among educational programs in nursing and related career opportunities. Further, the members believe that such an understanding is a vital link in strengthening

the relationships between the medical and nursing professions. Therefore the following report has been prepared to provide an overview of the diversification in nursing education.

There are presently wide varieties of educational programs in nursing from which a

Data on Programs in Nursing Education

Type of Program	Length of Program	Minimal Educational Requirements	Educational Setting	Administrative Control of School	Range or Average Tuition	Financial Responsibility	Certificate or Degree Conferred	Position for Which Eligible
Practical nurse	Approx 1 calendar yr	2 or more yr of high school, dependent on school requirements	Vocational high school, hospital, or junior college	Local school board or board of trustees of hospital	Free; up to \$800	Usually school subsidized; student purchases uniforms, books, etc.	Diploma or certificate—eligible to take examination for licensure as LPN	Bedside nursing under supervision of physician or professional nurse
Diploma (hospital)	27-36 mo	High school diploma	Hospital	Board of trustees of hospital, or independently incorporated yet associated with a particular hospital	\$106 to \$2,207 for 3 yr (median school \$826)	Student tuition, hospital and private funds	Diploma—eligible to take examination for licensure as RN	Bedside nursing
Associate degree	2 academic to 2 calendar yr	High school diploma	Community, or junior college	Local school board, or board of trustees of college	Minimal in state or community jr. col. up to \$2,000 per yr in private colleges	Student tuition, state or community sponsorship, and private funds	*Associate degree—eligible to take examination for licensure as RN	Bedside nursing
Basic or generic baccalaureate	4 academic or 4 calendar yr. A few schools offer 5-yr courses	High school diploma	College or university	College or university	Varies in state university; up to \$2,000 or more per yr in private universities	Student tuition and college or university funds	Baccalaureate degree—eligible to take examination for licensure as RN	Bedside nursing, public health nursing (candidate for head nursing)
Baccalaureate for RN	2½-3 academic yr or more	High school diploma	College or university	College or university	Varies in state university; up to \$2,000 or more per yr in private universities	Student tuition and college or university funds	Baccalaureate degree (BS, BN, etc.)	Bedside nursing, public health nursing (candidate for head nursing)
Master's	1-2 yr	Baccalaureate degree	College or university	College or university	From \$2,200 to \$3,500 per yr	Student tuition (traineeships avail. to students from USPHS and others)	Master's degree (MS, MA, MEd, MPH)	Administrator, educator, clinical specialist
Doctoral	Varies with choice of major area; approx 3 yr or more	Baccalaureate and master's degrees	College or university	College or university	From \$2,200 to \$3,500 per yr	Student tuition (research fellowships avail. to students from USPHS and others)	Doctoral Degree in nursing or related field	Administrator, investigator, and others

* Some states do not permit graduates of these schools to qualify for RN licensure and practice.

high school student can choose if she desires to become a nurse.

There is also more than one avenue to follow if the professional student wishes to obtain a baccalaureate degree. The educational programs in higher education also vary, dependent on the objectives and the philosophy of the faculty and the university of which the nursing school is an integral part.

The table represents the types of programs available to potential or graduate nurses, or both, the educational facility in which the particular program is offered, and the related fees as well as the locus of responsibility for the fee.

A few experimental programs hold some promise for the future; for example, certain diploma schools have reduced the length of their programs to 2 years. In order to provide both supervised experience and some remuneration for the individual, the schools have established internships which vary in length up to 1 year and provide a stipend. Some state laws require 3 years of educational preparation for admission to examinations for licensure. This stipulation prevents both experimentation with the length of diploma school programs and also the employment, in certain states, of graduates of associate degree programs. However, efforts are currently being made in several states to revise nurse practice acts in order that such experimentation will be possible.

One diploma school has arranged a plan whereby their students may elect to attend a nearby college at the same time they are attending the hospital school. One of the more interesting community plans is that of five schools pooling teaching facilities and sharing faculty for the first year of their diploma programs. Eventually they visualize one large, community, 2- or 3-year program which will use the clinical facilities and the dormitories of the five hospitals involved in

the project as well as the educational facilities of a local community college.

Enlightened nurses, educators, and others recognize that the diversity and heterogeneity of nursing programs lead to misconceptions and misunderstanding on the part of patients, physicians, and potential nursing students and their parents. They realize that nursing education is presently in the process of maturation. As yet no one has come forward with a plan acceptable to all interested groups and one which will lead the way out of confusion. The American philosophy of education has always been that of diversity—not homogeneity. In keeping with this philosophy, the concern about the varieties of programs may not be germane. The challenge for nurses and others, including physicians, is to define the role of the professional nurse and the practical nurse, and to examine these roles and responsibilities in relation to the changing role of the physician in a modern scientific world. What kind of care do patients need and who can most effectively provide that care? When the answer to this question has been made explicit and has been agreed upon, it might be less difficult to predict the type of educational program in nursing essential to meet the needs of the sick of the nation, to teach preventive measures for maximum health and the like.

The AMA Committee on Nursing respectfully suggests that each physician keep informed on trends in nursing in order that he can contribute wherever possible to the improvement of nursing education programs and to the clarification of the role of the nurse.

In conclusion, the Committee suggests that the Committee on Careers, National League for Nursing, 10 Columbus Circle, New York, be contacted for information on accreditation of professional schools of nursing and for careers material in general.

Reprinted from the Journal of the American Medical Association July 13, 1963, Vol. 185, pp. 144 and 145.

DRUG APPLICATION

The largest new drug application (NDA) ever submitted by Eli Lilly and Company—all 8,000 pages of it—has been sent to the Food and Drug Administration in Washington. The application covers a drug for use in the psychiatric field.

The NDA is one of the first processed by Lilly under the new FDA regulations issued in accordance with the Drug Amendments of 1962.

It would take one of the FDA reviewing officers fifty eight-hour working days to read the Lilly NDA if he spent only three minutes on each page.

The new drug application contains detailed reports on the new medicine—its chemistry, its activity in animals, its therapeutic action and side-effects in human beings. Formerly summaries of this information were sufficient for the FDA, but now they must be accompanied by individual reports on the use of the drug in each animal and each subject or patient by each investigator.

Some 150 investigators studied the new Lilly drug in 2,170 subjects. The enormous task of analyzing the data was done in part by electronic computer. It was possible to encode the data from 1,888 patients for the computer.

A Lilly spokesman said that the larger NDA does not mean that more clinical work is being done by Lilly but merely that more records and reports are obligatory.

Each copy of the Lilly application stands 34 inches high. The government gets three copies. The company also put together thirteen for its own use and for the use of other

organizations, such as the American Medical Association.

If all sixteen copies were put into a single stack, it would be 45 feet 4 inches tall.

A group of Lilly employees worked many hours of overtime collating some 128,000 pages of reports into the sixty-four volumes and related summaries of the sixteen NDA's.

The Lilly spokesman traced the growth of the new drug applications in recent decades. In 1940, he said, the average NDA was six pages long. By 1950, it was sixty; and by 1960, almost 600 pages. Now it is clear that a 6,000-page application could be the rule rather than the exception.

An NDA for another drug recently investigated by Lilly under the old regulations would have run at least 10,000 pages if the new rules had been in effect.



A new drug application for a psychiatric drug in several dosage forms stands thirty-four inches high. A physician of Eli Lilly and Company steadies the stack of 8,000 pages of reports. The bottles are samples required under the new regulations of the Food and Drug Administration.

Legible Writing

Legible writing by physicians and nurses will save a hospital thousands of dollars and thousands of hours, an Indiana hospital official said recently.

Herman Feldman, Ph.D., research director of Methodist, Gary, urged that hospital administrators embark on campaigns to make nurses and doctors more "Legibility conscious."

"The immediate effect of a hastily scribbled order is felt by the nursing staff who must decipher the order. They puzzle, consult, and telephone, among other things, in their attempt to comply with the physician," Dr. Feldman said.

The secondary or long range effect of illegibility may be that a mistake in medication is made.

Dr. Feldman set up a scaling system for measuring legibility of orders written at Methodist Hospital. He tested samples on nurses, ward secretaries, licensed practical nurses and others who read orders daily.

Approximately 120,000 orders are written annually in the hospital. He found that if all of these were legible, annually it would take 3200 hours to interpret them at a minimum cost of \$6,000. But if they were all very illegible it would take 30,000 hours and cost \$54,000 annually.

Forty per cent (48,000) of all orders written were less legible than average, Dr. Feldman said. These would take from 1,280 to 12,000 hours to decipher and cost between \$2,400 and \$21,500. At an average cost of 30 cents for each order, it cost the hospital \$12,000 more in money and 6,400 extra hours than it should have if all the orders were legible.

In addition to wasting time of the nursing staff, poorly written orders and reports waste the time of the medical record personnel and of physicians sitting on medical staff commitments, such as medical records, tissue and audit.

Solutions to the problem have included having physicians print their orders and hav-

ing them sit down to write them. Most now write orders standing up and "on the run."

Dr. Feldman's solution seems to be simply that the poor writer-physician or nurse—must take more time to be careful that his orders are understood. If you have another solution, let us know.

No-Calorie Diet

In a news release from the Emory University Clinical Research Facility a no-calorie diet is described.

Patients eat nothing and drink only distilled water or sugarless tea or coffee for ten days for the benefit of medical science and their own weight-related health problems. During the past year 79 volunteers have come to Emory to undergo this "treatment-research," and a number have repeated it at intervals of three months or more.

This is all part of a study directed by Dr. Garland Herndon to find out more about the process and effects of fasting. There are some diseases, he says, like acute renal (kidney) failure and cirrhosis of the liver where the patient, in effect, starves, and where physicians have traditionally injected glucose or other dietary supplements. Current studies may show whether the body accustomed to no calories is really able to use this "food."

Overweight patients who have the courage for the ordeal have an opportunity to lose from 20 to 30 pounds in a ten day period. They are hospitalized and receive excellent care.

The results so far in the Emory studies have been interesting. The researchers have found out, for instance, that the greatest weight loss takes place during the first 48 hours. Patients average losing about 4.4 pounds a day.

Patients are given a limited calorie diet to maintain after they leave the hospital and "starving." In at least 80 per cent of the cases they do not gain back much of their loss.

CONFERENCE ON ORAL CANCER

Members of the dental and medical professions in Florida, and throughout the southeastern states, are extended an open invitation to attend the special Conference on Oral Cancer which will be conducted at the Hotel Fontainebleau, Miami Beach, Florida, Tuesday, October 8. There is no registration fee, but advance notification of attendance is desired. Notice should be mailed to J. Leon Schwartz, D. D. S., Chairman, Conference on Oral Cancer, 201 West Platt Street, Tampa 6, Florida. Room reservations should be made direct to the hotel of your choice.

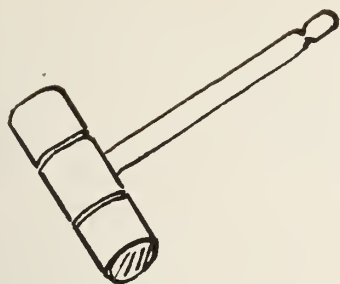
The conference which features a roster of nationally known speakers is being presented by the American Society of Oral Surgeons, the Florida Division of the American Cancer Society, in co-operation with the National Institute of Dental Research.

The registration desk will open at 8:00 A. M. The conference will be called to order at 8:45 A. M., J. Leon Schwartz, D. D. S., Tampa, presiding. Edward G. Thompson, D. D. S., president of the American Society of Oral Surgeons will welcome the assembly.

The morning sessions are as follows: 9:00 A. M., "Studies in the Viral Etiology of Cancer," C. Gordon Zubrod, M. D., Director of Intramural Research, National Cancer Insti-

tute, National Institute of Health, Bethesda, Maryland. 9:40 A. M., "Oral Exfoliative Cytology," George W. Greene, Jr., D. D. S., Professor and Chairman, Dept. of Oral Pathology, State University of New York at Buffalo. 10:30 A. M., "Radiotherapy of Oral Cancer—Present Status," John T. Mallams, M. D., Clinical Professor of Radiotherapy, Baylor University Dental School, Dallas. 11:10 A. M., "Prosthetic Rehabilitation of the Post-Surgical Oral Cancer Patient," Ralph S. Lloyd, D. D. S., Assistant Surgeon General Chief Dental Officer, U. S. Public Health Service, Washington, D. C. 11:50 A. M., "What the Doctor Should Know About Oral Pathology," Lester R. Cahn, D. D. S., Professor of Oral Pathology, Faculty of Medicine, Columbia University, New York City.

The afternoon sessions are as follows: 1:30 P. M., "New Concepts in Diagnosis and Surgical Treatment of Oral Malignancies," Colonel Robert B. Shira, Dental Corps, U. S. Army Chief of Dental Service, Walter Reed Medical Center, Washington, D. C. 2:10 P. M., "Cancer Teaching in a Resident Training Program," Thomas J. Cook, D. D. S., Director, Dept. of Oral Surgery, Jackson Memorial Hospital, Miami, Florida. 2:50 P. M., "Secondary Tumors of the Mandible," Bertram Cohen, D. D. S., Dept. of Dental Science, Royal College of Surgeons of England, London. 3:30 P. M., "Question and Answer Period."



President's Page



James H. Meigs, M. D.
Vice-President

The Fourth of July has just passed, a time when we celebrate the founding of this country. Since such important events in history are accomplished by people, we cannot help but wonder about the people who accomplished the founding of the greatest country the world has known. Certainly they were individualists; they were when they migrated to this country, and they remained so. They believed in the rights, the liberties, and the responsibilities of individuals. Doctors as a whole are perhaps the most rugged individualistic group in our country today. Of necessity and training we must be. Practice of medicine is not an exact scientific

procedure but is a combination of scientific knowledge applied with experience and judgement that must not be controlled by outside factors or groups.

However, just as our Founding Fathers learned, it was necessary to band together to protect the freedom to act as individuals. The organization of the Thirteen States was the result. Today, as then, it is equally necessary that we form our own organization to protect ourselves. As Dr. Annis has said: "Today the threats are more subtle, more insidious." They come largely from "a hybrid breed of bureaucrats, some politicians, some

economists, some sociologists, some educators."

All successful doctors have been tops in salesmanship; they have to be in order to sell themselves to the public. Sometimes it isn't an easy package to sell, but it's done. In the process however we have failed to sell our organizations, and our organizations represent us as individuals. What could an individual do in protesting a town's water or food supply or in stamping out epidemics or threats of epidemics? It must be done by groups or organizations such as our health department.

Town, London, editorializes on "No News." It says, "Anti-News is what newspaper editors call a story in which they've lost interest. It's what happens after foreign correspondents have flown out. It's the rebuilding of Nagasaki. Anything that doesn't cost lives, produce rubble or action photographs." It concludes by saying: "Good news, it seems, is no news."

Many of the things that are accomplished in medicine it seems are "Anti-News."

Maybe we, ourselves, are not aware of the many things that are accomplished by organized medicine. Maybe we are not as sold on our organizations as we should be. Whatever be our reason, it is now time that we correct the weakness. If you and I are to remain free to practice medicine as individuals, it will be the result of the strength of our medical organizations. One of the

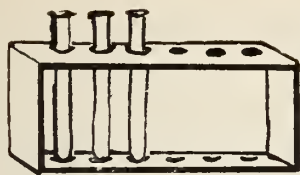
reasons for the constant probing from outside agencies and political groups is that they feel we are not strongly organized and that by driving a wedge they can accomplish their purposes.

Two of the most active committees in our State Medical Association today are the Committee on Orientation and the Committee on Public Relations. We need these committees to tell us what we are and have to offer. We also need to know what sort of ammunition the opposition is using and how to combat it. The Public Relations Committee should include every member of the Medical Association of the State of Alabama because you are on the front line with the public.

To quote John Philpot Curran: "It is the common fate of the indolent to see their rights become a prey to the active. The condition upon which God hath given liberty to man is eternal vigilance; which condition if he break, servitude is at once the consequence of his crime and the punishment of his guilt."

The medical profession is one of the few last footholds of the free enterprise system in this country. It is protected by our medical organizations; and if medicine is to continue to progress and give the public the finest medical attention in the world, we must support those organizations. We have so much to lose; we have so much more obligation to protect and defend it.

JAMES H. MEIGS, M. D.,
Vice President



STATE DEPARTMENT OF HEALTH

FIRST PERMANENT SHELLFISH LABORATORY OPENS IN ALABAMA

The first permanent shellfish laboratory recently opened in Alabama. The establishment of this laboratory is part of a program carried on by health and fishery agencies of the state and federal governments. The program is designed to insure that bivalve shellfish will be safe to eat.

The Gulf Coast Shellfish Sanitation Research Center is located at Dauphin Island. It was established in 1962 by the Public Health Service's Division of Environmental Engineering and Food Protection. The federal laboratory will assist states whose shellfish are produced in the Gulf of Mexico and South Atlantic in continuing research for the prevention of the contamination of shellfish.

The major categories of the shellfish sanitation research and services will be contamination source, environmental effects, food science, and training and technical assistance. Substances which pollute the coastal estuaries will be investigated. The mechanisms which govern the amount of pollutants that shellfish take in and retain will be studied. Laboratory officials plan to perfect processes which may free shellfish of contaminants. By research, methods may be found for detecting and measuring in shellfish the presence of biologically active substances including toxins from plants and animals of the sea. The development of more reliable laboratory techniques is planned. The research center will investigate the sanitary quality of the shellfish as a result of commercial handling processes. It will provide technical assistance to the state shellfish control agencies in areas of research for which the state is not equipped or in the investigation of problems of an unusual nature. Resources of the research center will be available in the training of state and federal sani-

tation specialists in new laboratory and field techniques.

To be utilized in these investigations are laboratories for work in chemistry, bacteriology, virology and marine sciences. A "wet" laboratory with a flow-through sea water system which pumps clean sea water will be used for studying the response of shellfish to various chemicals or micro-organisms found in the marine environment.

The Center initially employs a staff of thirty-five persons. The professional staff includes chemists, microbiologists, marine scientists, sanitary engineers, food technologists and sanitarians.

This federal facility, which will assist Alabama and other Gulf Shore states in research activities, was dedicated August 3, 1963. Presiding at the dedication ceremony was Dr. Luther L. Terry, Surgeon General, Public Health Service. The dedication address was presented by the Honorable Lister Hill. Alabama was represented by Dr. Ira L. Myers.

Shellfish sanitation research in Alabama was initiated in 1949 by the Water Improvement Commission when an extensive study was made of the water of Mobile Bay and its effect on shellfish production and safety. And again in 1960, a joint project between the Bureaus of Laboratories and Sanitation was launched by the Alabama Department of Public Health. This project is an intensive study of pollution of oyster growing waters in Mobile Bay. This new shellfish research program to provide information and standards on growing, collecting, and distributing oysters has received national recognition for its pioneering efforts in this field.

Continued research and co-operation by both federal and state programs should result in the production of a safe, wholesome seafood.

DEPARTMENT OF HEALTH

BUREAU OF LABORATORIES

Thomas S. Hosty, Ph.D., Director

July 1963

Examinations for intestinal parasites	267
Typhoid cultures (blood, feces, urine and other)	184
Brucella cultures	0
Examinations for malaria	9
Examinations for gonococci	1,594
Serologic tests for syphilis (blood and spinal fluid)	23,477
Darkfield examinations	1
Agglutination tests	2
Examinations for diphtheria bacilli and Vincent's	11
Examinations for Negri bodies (smears and animal inoculations)	230
Water examinations	2,812
Milk and dairy products examinations	3,928
Examinations for tubercle bacilli	3,680
Miscellaneous examinations	4,328
Total	*40,523

*Dothan Branch Laboratory report not received in time to be included in above report.

BUREAU OF PREVENTABLE DISEASES

W. H. Y. Smith, M. D., Director

CURRENT MORBIDITY STATISTICS

1963

	June	July	*E. E. July
Tuberculosis	124	99	176
Syphilis	137	149	135
Gonorrhea	367	381	323
Chaneroid	3	3	2
Typhoid fever	0	0	3
Undulant fever	0	1	1
Amebic dysentery	6	7	1
Scarlet fever and strep. throat	61	48	29
Diphtheria	0	1	1
Whooping cough	8	23	21
Meningitis	6	3	5
Tularemia	0	0	0
Tetanus	6	2	3
Poliomyelitis	1	12	7
Encephalitis	0	0	1
Smallpox	0	0	0
Measles	69	34	140
Chickenpox	23	16	23
Mumps	24	69	36
Infectious hepatitis	50	53	37
Typhus fever	0	0	0
Malaria	0	0	0
Cancer	743	627	606
Pellagra	0	1	0
Rheumatic fever	9	11	9
Rheumatic heart	31	25	18
Influenza	30	15	22
Pneumonia	167	112	114
Rabies—Human cases	0	0	0
Pos. animal heads	3	1	0

As reported by physicians and including deaths not reported as cases.

*E. E.—The estimated expectancy represents the median incidence of the past nine years.

BUREAU OF VITAL STATISTICS

Ralph W. Roberts, M. S., Director

PROVISIONAL BIRTH AND DEATH STATISTICS, AND COMPARATIVE DATA, JUNE 1963

Live Births Deaths Causes of Death	Number Registered During June 1963			Rates* (Annual Basis)		
	Total	White	Non-White	1963	1962	1961
Live Births	5,640	3,641	1,999	20.4	20.8	22.0
Deaths	2,426	1,566	860	8.7	8.4	8.3
Fetal Deaths	121	57	64	21.0	18.7	23.2
Infant Deaths—						
under one month	140	83	57	24.8	24.5	23.2
under one year	188	102	86	33.3	31.3	31.1
Maternal Deaths	5	1	4	8.7	8.6	3.3
Causes of Death						
Tuberculosis, 001-019	18	12	6	6.5	8.4	7.4
Syphilis, 020-029	3		3	1.1	2.9	1.5
Dysentery, 045-048	1		1	0.4	1.1	0.4
Diphtheria, 055						
Whooping cough, 056						0.4
Meningococcal infections, 057						
Poliomyelitis, 080, 081	1	1		0.4	0.4	0.4
Measles, 085	1	1		0.4		0.4
Malignant neoplasms, 140-205	326	231	95	117.6	114.4	114.8
Diabetes mellitus, 206	36	24	12	13.0	12.0	14.4
Pellagra, 281						
Vascular lesions of central nervous system, 330-334	340	208	132	122.7	115.5	117.4
Rheumatic fever, 400-402	4	2	2	1.4	0.7	
Diseases of the heart, 410-443	819	551	268	295.5	281.3	282.7
Hypertension with heart disease, 440-443	135	54	81	48.7	41.2	61.1
Diseases of the arteries, 450-456	52	35	17	18.8	16.8	15.1
Influenza, 480-483	6	3	3	2.2	2.9	1.8
Pneumonia, all forms, 490-493	64	36	28	23.1	15.3	19.9
Bronchitis, 500-502	4	2	2	1.4	0.4	0.4
Appendicitis, 550-553	3	1	2	1.1	0.7	
Intestinal obstruction and hernia, 560, 561, 570	9	6	3	3.2	5.8	3.7
Gastro-enteritis and colitis, under 2, 571, 0, 764	7	1	6	2.5	3.6	2.2
Cirrhosis of liver, 581	18	16	2	6.5	1.8	5.9
Diseases of pregnancy and childbirth, 640-689	5	1	4	8.7	8.6	3.3
Congenital malformations, 750-759	31	21	10	5.5	6.3	3.8
Immaturity at birth, 774-776	49	30	19	8.7	8.9	7.5
Accidents, total, 800-962	158	104	54	57.0	63.4	61.8
Motor vehicle accidents, 810-835, 960	81	56	25	29.2	29.5	30.6
All other defined causes	363	239	124	131.0	122.1	115.6
Ill-defined and unknown causes, 780-793, 795	106	40	66	38.2	37.5	43.1

*Rates: Birth and death—per 1,000 population

Infant deaths—per 1,000 live births

Fetal deaths—per 1,000 deliveries

Maternal deaths—per 10,000 deliveries

Deaths from specified causes—per 100,000 population



BOOK REVIEWS

Margin of Safety. By John Rowan Wilson. Cloth. Price, \$4.95. Pp. 258. Doubleday & Company, Inc., 575 Madison Avenue, New York 22, N. Y. 1963.

The title of this book comes from the margin of safety that experimenters have in shifting the use of a drug or vaccine from animals to human beings. The book is a story of poliomyelitis and the efforts of both scientists and non-scientists to conquer the malady.

Margin of Safety is an excellent example of the fact that actuality is far more interesting than fiction, and the author has made very good use of facts and personalities who played a large part in the fight against polio. Although all of us have lived through this advance in medical knowledge and capabilities, there are a tremendous number of facts given in the book that are not known to most people. The personalities of the people involved are described in a manner which makes them real and which adds measurably to the interest of the reader.

The author raises a number of questions and attempts to answer them. The most obvious one grows out of the title of the book: Was the margin of safety sufficient? Others deal with the efficacy of handling research through commercial companies, the role government should play in conquering diseases, the proper place of publicity in medical progress, and others of like ilk. One may or may not agree with his conclusions, but they are interesting and certainly grow logically out of the stated facts.

The book is easily read, due to the author's fluid style; and he makes the story he tells exciting and interesting.

W. A. DOZIER, JR.

Handbook of Pediatrics. By Henry K. Silver, M. D., Professor of Pediatrics, University of Colorado School of Medicine; C. Henry Kempe, M. D., Professor of Pediatrics and Chairman of the Department of Colorado School of Medicine; Henry C. Bruyn, M. D., Associate Professor of Pediatrics and Medicine, University of California School of Medicine. Cloth. Price \$4.00. Pp. 602. Lange Medical Publications, Los Altos, California, 1963.

This is one of many excellent handbooks published by Lange Medical Publications. The present volume represents the fifth edition which in itself is a good recommendation. The field of pediatrics is well covered in 602 pages of small type. The book is written in outline form, telegraph style perhaps, which very quickly supplies one with the kernels of fact concerning the condition reviewed. The authors are well known in pediatrics and have separated much wheat from the chaff in this handbook, have utilized every page for information including the inside of front and back covers, and have wisely provided many tables of differential diagnosis. Everything in the book is designed to present essential information quickly, succinctly, and authoritatively. This reviewer believes every doctor concerned with pediatrics should have two copies: one for the office and one for the home; and if he is an attending man, he should give the pediatric resident one to slip into his pocket; for it fits rather comfortably there.

W. A. DANIEL, JR., M. D.

Traitor Within. By Edward Robb Ellis and George N. Allen. Cloth. Price \$3.95. Pp. 228. Doubleday & Company, Inc., 575 Madison Avenue, New York 22, N. Y., 1961.

Traitor Within is subtitled "Our Suicide Problem," which indicates the subject matter of the book. The obvious purpose of the authors is to impress the reader with the suicide problem in this country. Perhaps they also wish to create enough interest in the situation to cause greater efforts to be made toward saving the lives of the many annual suicides. In emphasizing this point, it is stated that for every two deaths in automobile accidents there is one suicide; that statement should strike home with any reader who casually scans the daily paper and sees the many reports of automobile fatalities.

Among other aspects of the problem, the authors discuss the statistical facts available on who commits suicide, the problem in children, the possible effect of weather, whether or not suicides are sane, and suicide notes. Perhaps the most interesting section in the book is the appendix. In the final chapter, the authors ask the question of what can be done; and in the appendix they reproduce the training guide and case forms used by the FRIENDS, which is an experimental suicide prevention group in Miami, Florida.

If the previous statements concerning this book sound as if it would be dry and uninteresting, they belie the actual situation. It is one of the most interesting books that has come to hand in a long time. The authors are newspaper reporters and bring a style of presentation to these unpleasant facts which makes the reading enjoyable as well as dramatic. This book would doubtlessly be enjoyed by all medical practitioners and not just by the psychiatrists who are perhaps more closely concerned with the problem of suicide.

W. A. DOZIER, JR.

Good-Bye, Doctor Roch. By Andre Soubiran, M. D., translated by Helen Sebba. Cloth. Price \$4.50. Pp. 323. Doubleday & Company, Inc., Garden City, New York, 1961.

This is a novel by the author of the trilogy known as *Men in White* (not to be confused with the drama of the same name). Dr. Soubiran has written an interesting enough novel. Occasionally the story gets bogged down because of the need and desire of the author to show conditions in mental institutions in France prior to 1952. It

is this latter desire that makes the novel interesting; and because of this, it could be recommended to a physician if he is interested in light reading which will give him a basis for comparison with institutions in the United States.

W. A. DOZIER, JR.

Synopsis of Pediatrics. By James G. Hughes, Professor of Pediatrics and Chairman of the Department of Pediatrics, University of Tennessee College of Medicine. With the collaboration of twenty faculty members of the University of Tennessee College of Medicine. Cloth. Price \$9.85. Pp. 1031. C. V. Mosby Co., 1963.

This welcome addition to pediatric texts is a synopsis, a condensation but not an outline, of the general field of pediatrics. Its 1031 pages are enclosed in a durable binding, approximately 5 x 8 inches in size and 2 inches thick—thus forming a book easily held. The type is legible; and Dr. Hughes has included many clever, instructive diagrams illustrating various chapters. In addition to the usual chapters concerned with congenital deformities and infectious diseases, it is especially interesting to find chapters concerned with pediatric orthopedics, pediatric ophthalmology, and pediatrics surgery.

Synopsis of Pediatrics can serve as a text for students, a source of information for the intern and resident; but it seems especially valuable for the general practitioner or pediatrician who wishes to review the uncommon conditions which may present themselves in his office. The 64 page Appendix contains tables of blood and spinal fluid contents; dosages of important drugs; descriptions of diagnostic microbiologic specimens; and other handy, useful information. The index, while adequate, will probably be improved in future editions. An index, to be useful, must provide a quick statement of where the sought-for information may be found. Neurofibromatosis, for example, is listed as a sub-title under "Nervous System," whereas Neuroblastoma is listed separately. Perhaps this is correct; but to the hurried and often harried pediatrician searching the "N's," Neurofibromatosis should have a slot of its own and not be hidden in the nervous system—a minor criticism to be sure. Dr. Hughes is to be congratulated on a most acceptable addition to one's library, and his collaborators have presented well-written chapters.

W. A. DANIEL, JR., M. D.

The Woman's Auxiliary

Dear Doctors:

As the summer progressed, I was treated to many views of the State Medical Association in action. Beginning with the AMA Convention in Atlantic City where any Alabama face became a special face from home, we go on through the Public Relations Committee meeting on a Sunday in Montgomery with the Association Building fairly popping with simultaneous meetings and Dr. J. G. Daves keeping up with them all.

Next came the Rural Health Council, more familiar because I had been invited to it last year as president-elect. The contacts proved most stimulating both in personalities and in ideas for future programs. There is no end to the delightful and informative assistance to be obtained by prodding a few doctors for entertaining ideas for the Auxiliary's Fall Workshop. Being responsible for the agenda for this meeting, where we sincerely hope to see some husbands, especially our Advisory Council, those five tried and true mentors, Drs. Clemmons, Kimmey, Newburn, Patton, and Thuss, I naturally try to create opportunities for obtaining the very best in presentation in every way for our girls at the Workshop.

Our deadlines keep rushing at us and we are beginning to get used to them, checking one off as we drop a letter in the mail only to look ahead to the next two coming up soon. Besides this page we write for WAMASA Newsletter, a four times yearly publication to the wives; the Presidents News, every other month or so; and countless personal letters to people all over the state to try to keep things going. I am reminded of the words to a song, "I shall not pass this way again;" and since this thought really does apply to this position, it makes one holding the presidency resolve to do the very best job possible while the chance is offered. The year as president-elect really does help one prepare but only like the relay man who starts running in order to take the baton from his team mate.



We sent off hotel reservations recently to three places in one day—Birmingham, Atlanta and Chicago. That brings up the idea of having two people for this job, one to do the writing, one to do the going. Dibs on the going, though I do like to write, too. Birmingham will be the scene of the aforementioned Fall Workshop; Atlanta, a regional AMA-ERF conference; Chicago, the wonderful Presidents' Conference. After all that preparation we should have a fund of information to bring back to our own dear state.

Some of your wives will be making the trek to Birmingham September 19th and 20th; and if you are not accompanying them, please do try not to grumble because they are going; their presence is necessary to carry out the national program. You are invited especially to the banquet, Thursday, September 19, after which Dr. Ernest Oliver will show some of his antique guns and we will have an entertaining skit highly recommended by some of the Birmingham Doctors in the know.

Many county auxiliaries do not meet in the summer but will begin soon, with AMA-ERF goals, safety projects, community service work, and all the other things you have asked us to do—many of which you help us accomplish. Ah, the joys of being a doctor's wife. We may not all look like Donna Reed, but you make us feel as if we do.

Gratefully,

Marlys R. Sutton

OBITUARIES

BROWN—Joseph Lucien Brown, M. D., died on July 2, 1963 at the age of 71. Dr. Brown received his M.D. degree from the University of Maryland and interned at Baltimore. He was a member of the United States Naval Reserve.

He was a member of the Chi Phi Medical Fraternity, the Etowah County Medical Society, the Medical Association of the State of Alabama, and the American Medical Association. He was on the staff of the Holy Name of Jesus Hospital in Gadsden.

Dr. Brown is survived by his wife, Mrs. Hilda Pennix Brown; a daughter, Mrs. John A. Dickson of Gadsden; two sons, Dr. James Brown of Tuscaloosa; and Dr. Ansley Brown of Montgomery; six grandchildren and one great granddaughter.

CHENAULT—Frank Leigh Chenault, M. D., died on August 19, 1963 in a Decatur Hospital after a long illness. Born on a farm in Lawrence County in 1878, he was the youngest of seven children.

In 1897 Dr. Chenault took the examination for a teacher's license and taught for five years in the schools of Franklin and Lawrence counties. In 1901 he took and passed the first state board examination for first grade teachers. After five years of teaching and study, he entered Birmingham Medical College and was graduated in 1904, serving as valedictorian of his class.

Dr. Chenault was a member of the County Board of Censors, now the County Board of Health, for 25 years. He was president of the Morgan County Medical Society three times and was president of the Medical Alumni Association of the Medical College of Alabama in 1949.

He was a member of the Medical Association of the State of Alabama, and served as its president in 1955-56. He was a Fellow of the American Medical Association, a member of

the American Academy of General Practice, and of the Southern Medical Association.

In 1948 Dr. Chenault was chosen "Physician of the Year" by the Morgan County Medical Society and the Medical Association of the State of Alabama.

He was truly an honored and beloved servant of the people.

Dr. Chenault is survived by his widow, Mrs. Maggie Jackson Chenault; two daughters, Mrs. W. A. Dozier, Jr., Montgomery; and Mrs. W. T. Brown, Decatur; two sons, Dr. E. J. Chenault, and Frank L. Chenault, Jr., Decatur; and two grandsons.

HAMILTON—James Lonnie Hamilton, M. D., died on July 7, 1963 at the age of 65. Dr. Hamilton received his medical degree from Vanderbilt University where he also interned. He was a veteran of World War I and World War II.

Dr. Hamilton was president of the Chattanooga and Hamilton County Medical Society in 1951, and Secretary-Treasurer of the Etowah County Medical Society in 1963. He was Medical Director of the District IV Tuberculosis Hospital, a member of the American College of Chest Physicians, American Thoracic Society, American Medical Association, Tennessee and Alabama Trudeau Society, Chattanooga and Hamilton County Medical Society, Etowah County Medical Society, and was on the consulting staff of the Baroness Erlanger Hospital, Chattanooga, Tennessee.

Survivors include the widow, Mrs. Edith S. Hamilton; three daughters, Susan Lorena, Felice Ann, and Jane Elizabeth; one son, James Harvey; three sisters, Mrs. Dan Duncan, Mrs. Will Hester, and Mrs. Lee Underwood all of Russellville, Alabama; and two brothers, Mr. Fred E. Hamilton of Russellville; and Dr. John G. Hamilton, Decatur, Alabama.

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SURGERY IN CHOLELITHIASIS

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Boston, Massachusetts

Any patient who is found to have gallstones should have a cholecystectomy. There are a few exceptions to this rule, but not many.

The mortality rate for an *elective* cholecystectomy is less than one per cent. Unfortunately, this is not true for a *forced* cholecystectomy—forced because of the development of acute cholecystitis or jaundice resulting from a common duct stone. In one study of patients over 70 years of age the mortality rate for imperative cholecystectomy was three times that for elective cholecystectomy in the same age group.⁶ The complications of gallstones, such as acute cholecystitis, common duct stone, carcinoma of the gallbladder, gallstone ileus, chronic pancreatitis and cir-

rhosis, increase steadily with the duration of the disease.

The patient is often considerably older when these complications develop, and associated cardiac or renal disease may further increase the operative risk. The tragic part of it is that most patients who die from biliary tract disease have had gallstones for years. In some of these patients the gallstones were not discovered because their chronic digestive symptoms were never thoroughly investigated. Cholecystography was not done. If it were done the gallbladder may have failed to fill properly, but in the absence of symptoms it was not repeated. In our experience, biliary tract symptoms plus repeated non-visualization of the gallbladder mean cholelithiasis, usually a stone blocking the cystic duct. In other patients the correct diagnosis is made, but surgical intervention is not advised because the patient's symptoms are mild or infrequent.

*Read before the Fifth Medical Progress Assembly, Birmingham, Alabama, September 30-October 2, 1962.

ACUTE CHOLECYSTITIS

Acute cholecystitis is one of the most frequent complications of cholelithiasis, especially in the patient over 70 years of age. Its seriousness is indicated by the fact that in a study of 30,000 autopsies,⁴ over 50 per cent of those patients who died of biliary tract disease died of acute cholecystitis. In a recent review of the literature the mortality rate for patients operated on for acute cholecystitis was found to be 5 per cent.¹ Although our own mortality rate for acute cholecystitis at the present time is only one per cent, these patients have a higher morbidity than patients operated on for chronic cholecystitis and cholelithiasis. In eight per cent of our patients a perforation of the gallbladder had developed by the time they came to surgery. The danger of subphrenic or subhepatic abscess is increased. Some of these patients will require a second operation, either to remove the gallbladder or a common duct stone which could not be removed at the first operation because of the extensive inflammatory reaction which was present.

Over 50 per cent of our patients have had eight or more attacks of biliary tract pain before the onset of acute cholecystitis.³ Two-thirds of the patients in whom a perforation of the gallbladder develops have been acutely ill for more than three days. There is little question that the operative risk and the morbidity rate for these patients would be less if they were operated on before the acute inflammatory process developed.

The diagnosis of acute cholecystitis is rarely a problem. Fever, colic, right upper quadrant pain and tenderness sometimes associated with a mass are the most common symptoms. Nausea and vomiting are frequent symptoms. Treatment is surgical, but there is still a difference of opinion as to when the surgery should be carried out. There are those who think that the acute attack should be treated conservatively and the cholecystectomy done four to six weeks later when all of the acute symptoms have subsided. I have two main objections to this type of management. The first and most

serious is that in some patients the acute inflammatory process does not subside, but goes on to cause rupture of the gallbladder, with peritonitis and abscess formation. It has been estimated that in one of every four patients the obstruction in the cystic duct persists until it is removed. My other objection is that often the patient will not return for cholecystectomy because he "feels well." A recurrence of the inflammation or another complication frequently develops in these patients. In a study of 526 unselected patients with cholelithiasis who were not operated on, Lund⁵ found that their acute symptoms recurred or another complication developed later in 40 per cent of those with acute cholecystitis. We believe that these patients should be hospitalized and operated on as soon as they can be adequately prepared, unless the process is definitely subsiding. The time required for evaluation of the patient, correction of dehydration, and so forth, is usually a matter of 24 to 48 hours.

JAUNDICE

It has been estimated that in patients over 30, in 80 per cent of men and 95 per cent of women, the jaundice is the result of a surgical condition. In the great majority of these patients the jaundice is caused by a common duct stone. The risk of this complication increases with the age of the patient. In the large autopsy study previously referred to, the over-all incidence of common duct stone was 6.3 per cent. In those patients who were over 60 years of age it was 28 per cent. In our experience, when jaundice develops in the patient with cholelithiasis the surgical mortality rate is doubled. Over half of our patients who failed to survive cholecystectomy were jaundiced at the time of operation.

I shall not go into the differential diagnosis of jaundice, except to say that a careful history and physical examination and the numerous liver function tests will usually indicate whether the jaundice is surgical or medical. If the jaundice is mild, an intravenous cholangiogram may be helpful. Of course, one does not want to operate on a patient

with hepatitis, but it is a far greater mistake to allow permanent liver damage (biliary cirrhosis) to develop, the result of common duct obstruction by a common duct stone.

It should be remembered that jaundice is not present in every patient who has a common duct stone. We use rather broad indications for exploration of the common duct at the time of cholecystectomy: history of jaundice, dilated common duct, palpable stone, chronic pancreatitis, and small stones with a dilated cystic duct. A few years ago we attempted to evaluate the effectiveness of this policy. We know that the patient who is most likely to have an overlooked stone in his common duct is the patient who has had common duct stones removed. We undertook follow-up studies on 93 consecutive patients who had had stones removed from the common duct for four to six years.² Two patients (2.15 per cent) were found to have persistent or recurrent stones. We believe this is a reasonable figure, and compares favorably with that reported after the use of routine operative cholangiography.

GALLSTONE ILEUS

Intestinal obstruction caused by a gallstone is another complication of long-standing cholelithiasis. These stones pass into the intestinal tract through an internal fistula, usually between the gallbladder and duodenum. Although not a common complication, it is a serious one and the mortality rate is high. The clinical picture is that of a patient with a history of biliary tract disease in whom the signs and symptoms of small bowel obstruction have recently developed. Frequently the roentgenogram will reveal air in the biliary tract, loops of dilated small bowel and sometimes the calculus itself.

CARCINOMA OF THE GALLBLADDER

Carcinoma of the gallbladder is not common, but it is responsible for about 6,000 deaths each year in this country alone. The relation between gallstones and carcinoma of the gallbladder is remarkably close. The two have been reported to be associated in from

55 to 97 per cent of patients. It is estimated that carcinoma is found in 1.0 to 1.8 per cent of patients operated on for gallbladder disease. When carcinoma of the gallbladder does occur, it is almost always fatal. In our experience, the only patients who have survived a carcinoma of the gallbladder are those in whom the carcinoma was found in a gallbladder removed because of cholelithiasis. Since there is no way to make a preoperative diagnosis of this serious condition, it is another reason for advising cholecystectomy in a patient with stones in the gallbladder.

CHRONIC PANCREATITIS

Chronic pancreatitis is found six times as frequently in patients with stones in their gallbladder as in the general population. It has been estimated that in one-third of patients with pancreatitis the disease is the result of biliary tract involvement, in one-third it is the result of chronic alcoholism and in the remaining one-third the cause is unknown. One of the few means we have of preventing this serious disease is by the surgical correction of lesions in the gallbladder and common bile duct. Adequate biliary tract surgery in patients with gallstones and pancreatitis will relieve the pain in almost every instance.

After cholecystectomy usually just the gallbladder is available for study. We seldom obtain a biopsy specimen of the liver and very rarely of the pancreas. In the large autopsy study previously referred to, they were able to study histologically the effect of gallstones on the liver and the pancreas in every patient. Because of this, it seems to me that one of their conclusions is most interesting and significant: "The gallbladder with stones can, without causing inflammation in the gallbladder wall itself, produce serious changes in the liver and pancreas." In 50 per cent of patients with cholelithiasis some symptoms will develop sooner or later, and in 20 per cent the symptoms will be severe. In the study of 530 patients not operated on, the mortality rate for those over 60 years of age was seven per cent.

CONTRAINDICATIONS

Surgical intervention should be avoided if possible when the patient has had a recent (within three months) coronary occlusion. The same is true for the patient with gallstones who has no pain in the right upper quadrant and has severe angina on effort. We must not forget, however, that in many patients who had previously had a diagnosis of angina pectoris, the pain was really caused by a stone in the cystic duct and was completely relieved by cholecystectomy.

I also assume that good surgery is available to anyone with cholelithiasis. In this country it is either immediately at hand or within easy transportation distance. By good surgery, I mean a surgeon with adequate training and experience, operating with good lights, good assistants and good anesthesia. This kind of surgery implies a mortality rate of less than one per cent for uncomplicated cholelithiasis, few postoperative complications and a hospitalization period of about ten days.

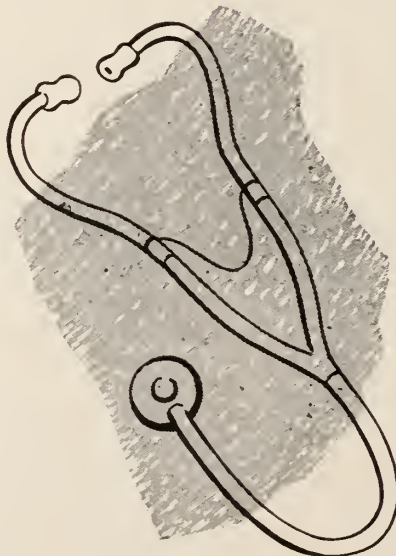
CONCLUSIONS

Persons still die from gallbladder disease. They do so because a complication of chole-

lithiasis develops. Most of these deaths could be prevented by thorough examination of the patient who has digestive symptoms, and the removal of gallstones whenever they are found.

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DISABILITY UNDER THE SOCIAL SECURITY ACT

George C. Risman, Ph. D., M. D.

Regardless of his personal attitude toward the Social Security program, it is advisable for each physician to be fully informed of the disability clauses since he is an adjunct to their administration. There are few who have not been asked to complete a Form 826 (Figure 1) or to assist a patient in applying for these benefits. The aim of this report is to analyze a sample of the medical information submitted on these forms and to evaluate their completeness for adjudicative purposes. In addition, it reviews 200 questionnaires supplementing incomplete information on the original form. It is hoped that this presentation in conjunction with further explanation of the disability aspects of the Social Security Act will result in the following:

1. An understanding of the specific information needed by the State Agency
2. A decrease in the number of follow-up letters to physicians requesting additional information
3. A clarification of the criteria of disability being used by this agency as opposed to those used by the Veterans' Administration, Workmen's Compensation Board, and Department of Pensions and Security
4. A more speedy award of benefits to economically-distressed and seriously-

ill applicants who meet the requirements of the law.

INTRODUCTION

In 1954 Congress amended the Social Security Act to prevent the loss or diminution of retirement benefits which would have occurred in the event of a prolonged medical impairment or inability to work. A "disability freeze" was provided if the insured were found medically unable to perform any substantial gainful activity. The "freeze" (or waiver of premium) maintained the status of the beneficiary's retirement benefits. This amendment introduced disability benefits into the Act which hitherto had provided only retirement benefits. Subsequently, a Division of Disability Operations was organized in the Bureau of Old Age and Survivors Insurance. An agency was designated in each state to co-operate with the Federal Government in processing applications. The responsibility for determining disability was entrusted to these two agencies. The criteria of disability were established by law.¹

In 1956 Congress awarded monthly cash benefits to each insured individual over 50 years of age who met these criteria. In 1960 any insured and disabled worker, regardless of age, became entitled to these benefits. About 73 per cent of the applicants over 50 years of age were found disabled in 1962 while 61 per cent of those under 50 years of age were so considered. Approximately 24 per cent of all individuals awarded disability benefits in 1962 were under 50 years of age.

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The author is indebted to John Whitehead, M. D., Chief Consultant to the Alabama Agency, for his co-operation and assistance.

1. Title 20: Code of Federal Regulations; section 404.1501 et seq.

DISABILITY UNDER THE SOCIAL SECURITY ACT

Nationwide, approximately 500,000 applications are received annually while 12,000 applications are processed yearly in Alabama.

Monthly benefits are granted on a life-time basis—although cessation is possible in the event of medical improvement, vocational rehabilitation, or actual participation in gainful activity. Over one billion dollars was paid in 1962 to disabled individuals, their wives, and/or dependents. These allowances do not include death or retirement benefits which are covered by a separate section of the Act. Benefits range from a legal minimum of \$40 to over \$200 per month and depend on the previous average monthly earnings, the number of dependents, and other factors.

OBSERVATIONS

Two hundred three original medical reports (Form 826) were evaluated quantitatively for the following information: 1) a clinical history compatible with the claimant's allegations; 2) objective physical findings consistent with the diagnoses and indicative of their severity; 3) laboratory tests which would confirm the diagnoses and measure their severity; and 4) combined subjective and objective findings which would permit an independent appraisal of the functional impairments. This information is presented in Table 1.

In only 33 cases or 16.2 per cent (Table 1) did the information from a *single* physician allow the reviewing physician to measure the severity of the impairment and to decide whether disability existed. However, in an additional 55 instances (27.0 per cent) this information in conjunction with ancillary observations and reports from other physicians and hospitals was sufficient to permit an adjudication. In the remaining cases (115), the information was completely unsatisfactory for adjudicative purposes. In the latter, either an independent examination was obtained or the original physician was recontacted for additional details.

The clinical history (Column A) was reported satisfactorily in 183 instances but supportive findings of a physical examination (Column B) were described effectively in only 136 cases. However, in only 95 of these reports was satisfactory information recorded simultaneously. In the remaining 41 instances one of these items was incomplete which thereby nullified the information conveyed by the other. In the remaining group (67 cases), the details of the physical examination were totally incomplete for our purposes.

Pertinent laboratory tests were included in 149 cases—13 more than the number of adequately recorded physical examinations.

Table 1
ANALYSIS OF MEDICAL INFORMATION SUBMITTED
IN 203 ORIGINAL APPLICATIONS (FORM 826)

Rating of Information	COLUMN A Subjective Data Clinical History		COLUMN B Objective Data Physical Examination		COLUMN C Objective Data Laboratory Tests		COLUMN D Overall Evaluation (Not sum of A,B,C)	
	N	%	N	%	N	%	N	%
Complete ⁽¹⁾	91	44.8	47	23.1	59	29.0	33	16.2
Satisfactory ⁽¹⁾	92	45.4	89	43.8	90	44.2	55	27.0
Unsatisfactory ⁽¹⁾	20	9.8	67	33.1	54	26.8	115	56.8

⁽¹⁾Information was graded on its effectiveness for adjudication—not for clinical purposes.

Figure 1

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
SOCIAL SECURITY ADMINISTRATION
Bureau of Old-Age and Survivors Insurance

Form approved.
Budget Bureau No. 72-R510.4.

MEDICAL REPORT

(General)

NOTICE TO PHYSICIAN: The following information is furnished for use in connection with the patient's application under the Federal old-age, survivors, and disability insurance law and his possible vocational rehabilitation. Please make your report complete enough to enable a reviewing physician to determine the nature and severity of impairment. The Bureau does not assume any responsibility for payment of fees for furnishing the information requested.

(Name)	(Date of birth)	(Social Security Number)
1. PHYSICAL MEASUREMENTS		
Give applicant's height and weight at last visit.		inches lbs.
2. HISTORY		
(a) When did present illness or injury occur?		
(b) Date applicant became unable to work		
(c) Is there a previous history of this illness?		
If "yes," describe		
3. PRESENT CONDITION (All Major Impairments)		
(a) Subjective symptoms		
(b) Objective findings		
Give report of X-rays, ECG's, laboratory or diagnostic tests, with dates. Use separate sheet if necessary.		
(c) Is applicant Ambulatory?		<input type="checkbox"/>
Bed confined?		<input type="checkbox"/>
House confined?		<input type="checkbox"/>
Hospital confined?		<input type="checkbox"/>
4. DIAGNOSIS		
5. TREATMENT		
(a) Therapy and response		
(b) Date of first visit		
Date of last visit		
Frequency of visits		
(c) When did you last examine the applicant?		
6. PROGRESS		
(a) Is condition static?		
(b) If not, what optimum improvement can be expected, if any?		
(c) When?		
6 Months		<input type="checkbox"/>
1 Year		<input type="checkbox"/>
Indefinite		<input type="checkbox"/>
(d) Describe specific restrictions, if any, on patient's activity		

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Figure 2

7. If disability is due to CARDIAC, RESPIRATORY, ARTHRITIC, NEUROLOGICAL, OR VISUAL CONDITIONS please amplify below with latest findings and dates.

CARDIAC	(a) Precise diagnosis including functional and therapeutic classification, American Heart Association	
	(b) Describe heart size and contour	
	(c) Blood pressure	
	(d) What kind and amount of activity or stress results in (1) Dyspnea? (2) Angina?	
	(e) Edema (give location).	
RESPIRATORY	(a) Acute attacks Frequency, duration, and severity	
	(b) Deformity of chest wall	
	(c) Emphysema	
	(d) Vital capacity in cc's	
	(e) What kind and amount of activity results in dyspnea?	
	(f) If TB, give National TB Association Classification .	
ARTHRITIS	(a) Physical Findings.—Give specific findings for all joints involved, describe deformities, tissue and bone destruction, range of motion	
	(b) X-ray report	
NEUROLOGICAL	Describe any of the following conditions that are present, indicating severity, distribution, and residual function in affected parts	
	Atrophy Tremors Paralysis Gait Hemiplegia Reflexes Impaired speech Mental disturbances	
	Laboratory findings: Cerebrospinal fluid (Wassermann, protein, cell count, etc.), X-ray findings, EEG's, other . .	
VISUAL	Visual acuity after best correction	Right Left
	Visual fields (attach chart if available)	
	Fundusoscopic findings	
	Ocular tension, if available	
	Recommended therapy and prognosis	

(Additional Narrative Report Is Desirable)

8. REMARKS

Please print or type name of physician or organization		Signature and title	
Address	City	State	Date

DISABILITY UNDER THE SOCIAL SECURITY ACT

Table 2

ANALYSIS OF 228 QUESTIONNAIRES FOR INFORMATION SUPPLEMENTARY TO ORIGINAL FORM 826

RESPONSE	N	% of Total
1. No answer to first letter	71	31.2
2. No answer to second letter	28	12.3
3. Answered	129	56.5
A. Data permitted adjudication	86	37.7
B. Data did not permit adjudication	43	18.9

However, these tests did not always permit a determination of disability since many of them were static (cholesterol, hemoglobin, etc.) and did not measure the impairment quantitatively. Some exceptions did occur such as a blood urea nitrogen determination in uremia, pulmonary function tests in emphysema, X-ray reports of arthritic joints, etc. Unfortunately, there were many cases in which laboratory data were presented which did not closely correlate with the history or physical examination. As a result an estimate of the individual's residual functional capacity could not be made.

The information in Table 2 was obtained by recontacting the treating physician(s). Specific questions were asked to elicit and amplify incomplete details of the impairment which had been previously mentioned in Form 826. If no answer were received in ten days, a duplicate request was sent. Failure to receive an answer in an additional ten days closed the file and a different approach to obtain this information was instituted.

Two hundred twenty-eight consecutive and unselected inquiries over a designated period were analyzed (Table 2). A small percentage (12.3 per cent) failed to answer either request. Seventy-one replies (31.2 per cent) did not answer the first but did answer a second letter. These were not included in the

"answered group" since the replies were received after the cut-off date. More than one-half (129 or 56.5 per cent) of the questionnaires were answered within the selected period.

The responses to the questionnaires permitted an adjudication, either an allowance or denial, in 86 additional instances which previously had been considered incomplete. This represented 37.7 per cent of all inquiries and 66.6 per cent of all receipts. These data show that considerably more information for adjudicative purposes exists than is being submitted. If this information were submitted originally, the necessity of bothering physicians with supplementary inquiries would be significantly reduced and the processing of applications would be hastened.

DISCUSSION

A. Disability Versus Impairment Under Social Security

By precedent,^{2,3} the concepts of *impairment* and *disability* have been separated. Impair-

2. Committee on Medical Rating of Physical Impairments: Guides to the evaluation of permanent impairment: J. A. M. A. 172: No. 10: 1049-60; March 5, 1960.

3. Editorial: From Guesswork to Guideline: J. A. M. A. 166: No. 7: 781; February 15, 1958.

ments are considered as alterations of the normal pathophysiological processes of the body. Physicians are solely responsible for determining their nature and severity. Disability, however, indicates an alteration in the capacity to work. Legal, lay, and medical opinions co-operatively establish its severity and extent. Under this Act disability has been defined as "an inability to engage in any substantial gainful activity by reason of a medically determinable physical or mental impairment which can be expected to be of long-continued and indefinite duration or to result in death." This definition is facile and reasonable except for possible disagreement on the terms "long-continued and indefinite." Medical and legal interpretation of these terms might differ significantly.

As a result of the amendments in 1956 and 1960, three main factors in the adjudication of disability have been recognized: 1) medical criteria of impairment have been established, the severity of which are generally considered inconsistent with the ability to work and which are verifiable by objective evidence; 2) the ability to work has been found to correlate more closely with the residual functional capacity than with the mere presence of a particular disease; 3) vocational aptitude, transferable skills, previous training, and education have been found to play a significant role in evaluating disability and in assessing the remaining capacities of an individual to perform some work—consistent with, but not necessarily identical to, his previous occupation.

A medical and occupational evaluation of these factors is made by physicians and vocational rehabilitation counselors in the State Agency to determine whether disability does exist. The medical evidence in each application is reviewed and evaluated by a local physician,⁴ as well as by a physician in the

Federal Agency to determine whether the impairment meets the severity stated or implied by law. The rehabilitation counselor evaluates the non-medical assets.⁵

B. Responsibility of the Applicant's Physician

The initial medical information is submitted for the applicant by his physician(s). The confidential nature is respected and secured by having the physician mail this form himself. In addition, other evidence from hospitals, the Veterans' Administration, or other clinics in which he has been treated is usually submitted. Hospital reports are necessary and replete with details which are essential to the verification of the impairment. However, such reports are usually static rather than dynamic in description. About one-half of all applications are adjudicated on these data alone. For the remaining, additional detailed medical information is necessary and is obtained either from an independent consultation⁶ or by questionnaire.

At this level of investigation complete information from the family physician is advisable if multiple consultations, supplementary letters to the treating physicians and hospitals, and divergent medical opinions are to be avoided. Frequently, only the applicant's physician has adequate knowledge of his functional capacity and his residual abilities. While a consultative examination may obtain the objective tests required to authenticate an impairment, it may not replace the value of repeated clinical observations which could assess the severity of that impairment. Both types of data are necessary for proper adjudication.

The information in Table 1 indicates only the general barriers to adjudication. The specific problems include the following:

4. In the Alabama Agency, the six part-time physicians include four internists, one pathologist and one surgeon.

5. Roemmich, W.: How Social Security reports are used: J. A. M. A. 171: No. 16: 2226-28: December 19, 1959.

6. Consultative examinations were obtained in 40 per cent of the applications received nationwide; in Alabama the rate averaged 47 per cent.

1. Failure to include objective evidence such as electrocardiograms, X-ray reports, blood tests, etc. which authenticate the clinical impression and permit an independent confirmation of the diagnoses (Column C, Table 1)
2. The use of diagnostic terms such as cerebral thrombosis or myocardial infarction without description of the resultant severity which interferes with bodily functions (Column B, Table 1)
3. The lack of specific detail in describing the functional limitations imposed by the impairment in contradistinction to those prescribed by the physician
4. The physician's concern with "disability" rather than with "impairment," and
5. The natural desire to help an applicant obtain temporary financial assistance in a program designed to evaluate permanent capacity to work.

In general, the universal difficulty is a failure to describe the defects in sufficient detail to permit an independent evaluation by others. What may be an obvious impairment to the treating physician is not necessarily obvious to the reviewing physicians unless it is completely described "on paper."

SUMMARY

The disability program of the Social Security Act provides monthly cash benefits to each disabled worker, regardless of age, on a life-time basis. Over 500,000 applications are received annually and about 70 per cent meet the level of prescribed severity. In order to assure full consideration to each application and to equate divergent, geographical and personal medical opinion, standard criteria of impairment have been established. The existence of an impairment does not indicate that disability exists, since the concept of disability requires evaluation of the non-medical factors such as training, age, aptitudes and skills.

The State Agency obtains all available medical information and determines whether the criteria of disability are met. The family physician can provide maximum assistance to his patient by submitting all pertinent information relating to the claimant's impairment—without personally being concerned with a determination of disability. This information should be sufficiently objective in clinical and laboratory details to allow the reviewing physicians to assess its severity.

An analysis of 203 reports from individual physicians revealed that only 16.2 per cent were sufficiently detailed to permit an adjudication without further development. Additional reports from other physicians, hospitals, and non-medical sources submitted originally by the applicant increased this rate to 43.2 per cent. While this incidence might appear low, it is significantly high in compensation programs of this type. It is an excellent demonstration of the existing co-operation between the State Agency and physicians when compared to other national programs which require all applicants to be examined by independent consultants or by agency-employed physicians. Specific questionnaires eliciting supplementary data to the original Form 826 increased the rate of adjudication by one-third to approximately 62 per cent. An independent consultation was required to adjudicate the remaining cases.⁷

These studies demonstrate that an improved liaison between the State Agency and the family physician can provide more complete information on the initial application than is presently being submitted. It is hoped that this review will convey the objectives of the program and the medical information needed to evaluate impairment and subsequently to adjudicate disability.

7. These percentages exceed 100 because of overlapping modes of development.

CHORDOMA

by

J. Clayton Davie, M. D.

and

Maitland Baldwin, M. D.

Chordoma is a rare and usually fatal tumor of a unique type which has as its possible origin remnants of the fetal notochord. It is characterized by slow and progressive growth, a tendency to invade and destroy bone by direct extension. It rarely involves soft tissue. There is local recurrence after surgical excision and complete extirpation is almost impossible. Chordoma is resistant to irradiation, and occasional regional and distant lymph node and visceral metastases occur.

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Appreciation to Miss Gertrude Grant and Mrs. Harriett Ottenstien for aid in preparation of this manuscript.

Historical

Luschka, in 1856,¹ described small masses of soft, jelly-like tissue arising by a fine pedicle from the clivus blumenbachii (sloping surface between sella turcica and foramen magnum composed of the sphenoid and occipital bones). Virchow,² in 1857, attributed these masses of tissue to degeneration of cartilage and called them *eccondrosis* (from cartilage) *physaliphora* (vacuole containing cell).

Müller,³ in 1858, after demonstrating that notochord persisted after birth in the sphenoccipital synchondrosis and that nests of tissue in the basilar cartilage were similar in structure to the nucleus pulposus of the intervertebral discs, was the first to designate the origin of these masses to the notochord. He subsequently called these nests of tissue *chordoid tumors*. In 1864, Klebs (according to Mabrey⁴ but not referenced) gave a report of the first case of clinical importance. It was in 1894 that Ribbert⁵ adduced experimental evidence to support Müller's hypoth-

esis. He punctured the intervertebral discs of rabbits, producing herniation of nucleus pulposus with resultant tissue proliferation resembling chordal tissue. Congdon,⁶ in 1952, repeated Ribbert's classical experiment and obtained similar results. Ribbert also claimed to have found notochordal tissue spring from the clivus in two per cent of his autopsies.

Henning described the first sacro-coccygeal chordoma in 1900 in a seven month fetus; however, according to Mabrey, the first case was in 1864 (Klebs). Wood, in 1913, described the first sacro-coccygeal chordoma in America. Fischer and Steiner in 1907 described the first cranial chordoma.

Stewart and Morin⁷ reviewed 57 cases in 1926. Coenen⁸ reviewed 68 cases in 1925. Mabrey⁴ reviewed 150 cases in 1935, Leon Littman⁹ reviewed 168 cases of sacro-coccygeal chordoma in 1953, Gentil and Coley¹⁰ reviewed 135 cases in 1943. Utne and Pugh¹¹ compiled 505 cases in 1955.

Embryology of Notochord

The notochord is a tiny rudimentary structure which appears in the very early embryo, arising from the front of the primitive streak as a separate structure (Hensen's node). Initially a thickening of the entoderm occurs in a mid-sagittal plane known as the chordal plate and this plate becomes separated from the entoderm, forming a longitudinal structure ventral to the neural canal-primitive notochord.

The notochord develops to become a solid cord of non-vacuolated, polygonal, undifferentiated epithelial cells in the mid-dorsal region, extending from the caudal to the cranial end of the embryo.¹² The external cells are flattened and pressed together, whereas the central cells are distended and vacuolated, containing a gelatinous-like substance which, at a later stage, breaks out of the cells in a sheathlike manner.

The mesenchymal cells arrange themselves in segments around the notochord (anlage of vertebra) and are subsequently vascularized

by an intersegmental artery. There is an avascular area between the segments which remains undifferentiated for some time and represents the anlage of the intervertebral disc. In the embryo of ten weeks the vertebral body contains typical cartilage and ossification centers and at this time the tissue between the primitive vertebrae consists of elongated fibroblastic cells. As the intervertebral tissue is compressed by the growing vertebral bodies, due to cartilaginous formation and ossification, the cells are only confined to the central portion of the intervertebral disc; i.e., nucleus pulposus.

Etiology and Histogenesis

Since it has been shown that notochordal tissue persists and ectopic chordal tissue has been noted in cranial, vertebral, and coccygeal regions, the theory that these tumors arise from these remnants was inevitable. After Ribbert's experiment the same was true about the inviolability of the theory of traumatic release of notochordal tissue with resultant neoplasia. Today it is assumed by many that chordomata arise from notochordal rest. However, others feel that this is to return to Cohnheim's cell rest hypothesis which has been rejected by most pathologists of our day. It may be expected that proliferating tissue in vertebral region may differentiate in the direction of a mucoid tissue resembling notochord. This occurs in the cells of the annulus fibrosus in cases of prolapsed disc. Thus, one does not have to postulate an origin from specific cells in the case of these tumors.

As a result of the recognition of the multipotent properties of cells it has become impossible to state definitely the origin of a given mass of neoplastic cells. We apply the term "chordoma" to a tumor which structurally resembles notochordal tissue, and though it is conceivable that it may have arisen from true notochordal remnants, it is more likely to have developed by a process of differentiation from any of the tissues which replace notochord.

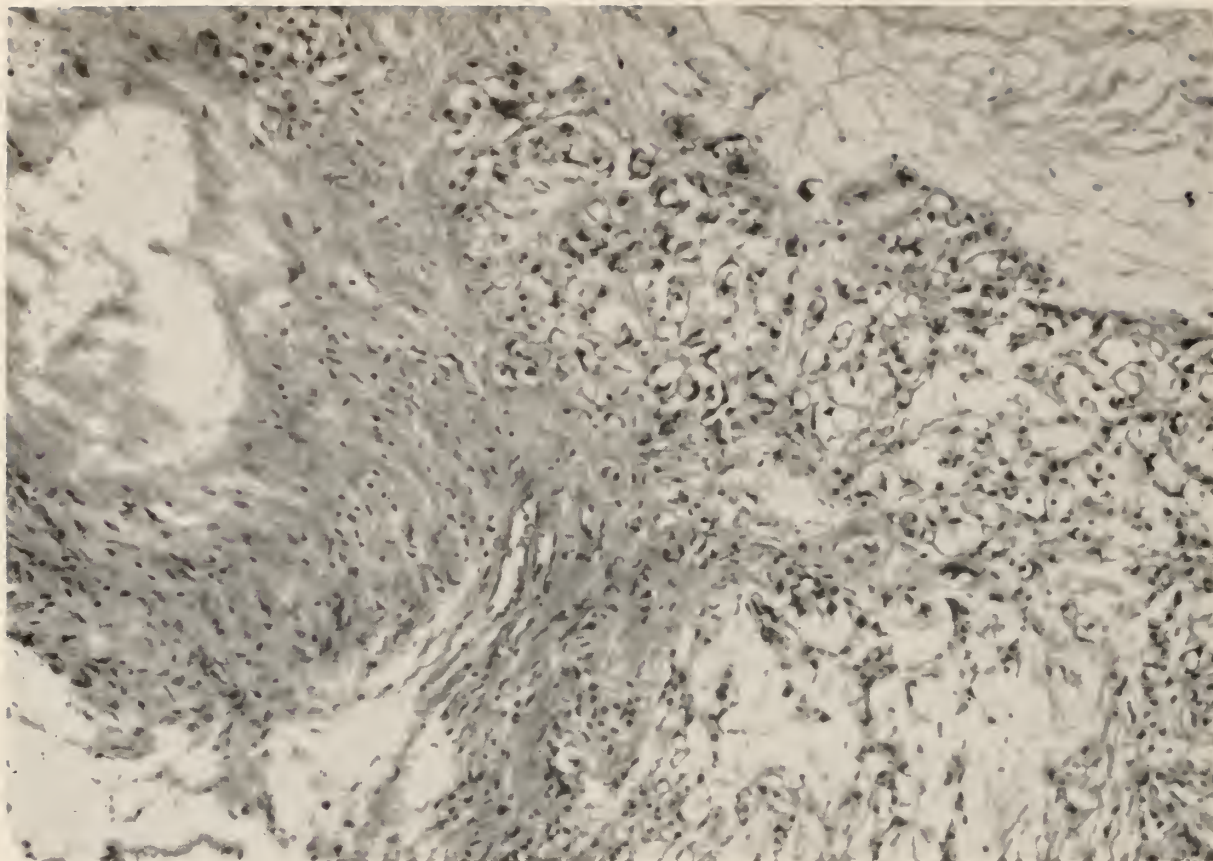


FIGURE 1A

Microscopic section illustrating characteristic features of chordoma. In the middle of the field are the physaliphorons and signet-ring cells and intra- and extracellular mucin. The pattern of lobulation and fibrous strands is also demonstrated.

Crawford ¹³ (1958) pointed out the remarkable similarity in the histochemical staining reactions of chordoma and cartilage. He concluded that the reacting substance in both of these tissues was an acid-mycopolysaccharide. It is of particular interest that these two substances, produced by tissue of such widely different embryological origin (supposedly) and separated so widely in their phylogenetic history should resemble one another. With 11 different histochemical staining preparations no difference between the two tissues was discernible. Only with phosphotungstic acid hematoxylin and reticulin stains were there any differences. The chordoma did not stain and the cartilage was stained brownish pink and diffused.

Pathology

Gross pathology: Chordoma is rarely a completely resectable tumor. Typically, this tumor is encapsulated and, on cut section, is divided into lobules by fibrous trabeculae. It has a gelatinous consistency, grayish to purple to red in color due to excessive vascularity and hemorrhagic areas. On gross appearance the degree of gelatinous mucoid degeneration may be indicative of relative benignancy. An increasing solidity and opacity indicate a greater degree of malignancy. The most characteristic feature of the neoplasm is its local infiltration and bone destruction. Distant metastases occur occasionally.

Microscopic pathology: Vacuolation of the cellular element, affecting the cytoplasm and

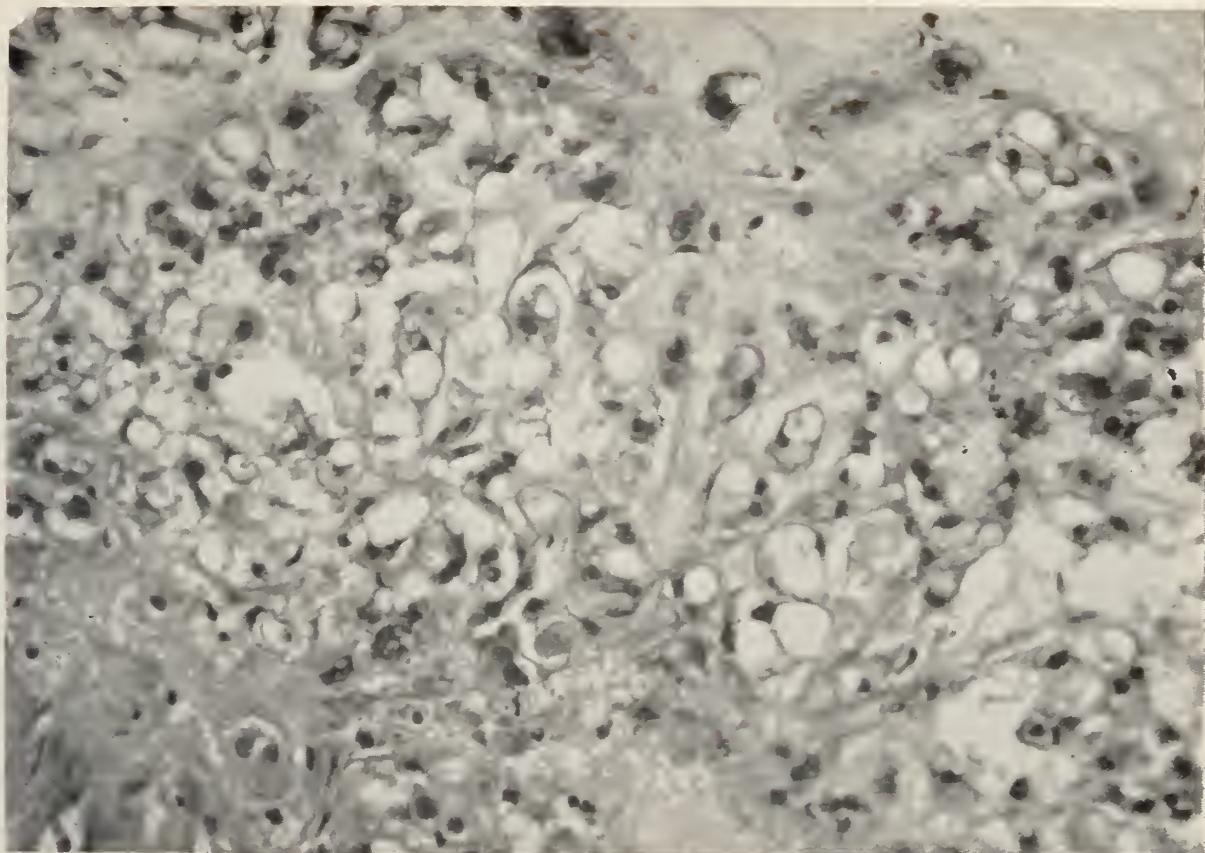


FIGURE 1B

Higher power view of chordomatous tissue; illustrating the physaliphorous cells with mucinous degeneration.

intercellular spaces about the ectoplasm, is a specific characteristic of chordal tissue. The pathological diagnosis depends primarily on the recognition of the physaliphorous (bubble-bearing) cells, this being the most striking histological feature. The cells are arranged in lobules or cords, or they may present a solid epithelial pattern. Near the center the demarcation of the individual cells is lost and the microscopic appearance is that of a highly vacuolated syncytium or mucinous network. (Fig. 1A and 1B).

Incidence

The precise incidence of this tumor is not known; however, the following are relative

incidences. Gentil and Coley reported seven cases out of 31,099 cancer cases at Memorial Hospital from 1930 to 1943; Ross¹⁴ reported one case in 440,000 admissions to the King's County Hospital; three cases in 361,000 admissions at the Jewish Hospital at Brooklyn were reported by Littman; Harvey and Dawson¹⁵ found only 14 definite chordomas from over 16,000 tumors from all regions of the body. Petit-Dutaillis,¹⁶ in 3,000 cases of cerebral tumor, encountered only four chordomas.

Age and Sex

Age: The earliest age reported for occurrence is that in a seven month old fetus. The

oldest patient with a sacro-coccygeal tumor was 78 and the oldest with a spheno-occipital tumor was 82. In Mabrey's series of 150 cases the average age for spheno-occipital chordoma was 40 for both male and female; for sacro-coccygeal chordoma it was 50.5 years for males and 43.2 for the females. In the cranial chordomas the average age was 32.4 for females and 43.9 for males.

Sex: The ratio for sacro-coccygeal chordoma reported by Mabrey is 20 to one (58/27), males to females, and approximately the same incidence was reported by Gentil and Coley (93/42 males/females). The ratio of males to females in spheno-occipital chordoma is 1.5 to one.

Location of Tumor

Chordoma characteristically occurs at the extremities of the notochord but may occur anywhere in its course. Table 1 illustrates the location of 505 chordomas and a useful classification devised by Coenen.

TABLE 1

Classification of chordoma and location of 505 cases

Location	Number	Percentage
Cranial	197	39
(a) Sphenoid		
(b) Clivoid		
(c) Nasopharyngeal		
(d) Hypophyseal		
Vertebral	81	16
(a) Cervical — 37		
(b) Thoracic — 12		
(c) Lumbar — 32		
Sacrococcygeal	227	45
(a) Ante-sacral		
(b) Sacral		
(c) Retro-sacral		

X-ray Appearance

The classical and often referred to radiological signs of sacro-coccygeal and vertebral

chordoma were reported by Hsieh and Hsieh¹⁷ in 1936. They are:

- (1) Expansion of tumor mass, demonstrated in antero-posterior and lateral views.
- (2) Rarefaction or destruction. The involved bone presents either a loculated appearance, with multiple small circular or oval radiotranslucent areas or the bone is destroyed over a large area.
- (3) Trabeculation. The remains of the undestroyed bone from dense trabeculae which may extend into soft tissue mass outside the original normal boundary of the bone.
- (4) Calcification. This may be due to reactive new bone formation or deposits of calcified material in the tumor following degeneration or necrosis.

There are no specific or pathognomonic features for cranial chordoma. Thus, the diagnosis is difficult. Radiographic changes due to cranial chordoma cannot be differentiated from those of other neoplastic processes which involve the base of the skull. The radiographic changes demonstrate only a mass and usually bone destroying lesion at the base of the skull, most frequently in the region of the clivus. At times there may be no radiographic changes. Diagnosis depends on a degree of suspicion and tissue confirmation.

Symptoms

The most frequent symptom which is common with all chordomas is pain. The subsequent signs and symptoms are related to location of this bone destroying disease.

Cranial—Cranial nerve involvement is most frequent after headache. Due to location of these tumors and the anatomical position and path of the cranial nerves, they inevitably become involved. Most frequently involved is the sixth cranial nerve; however, all cranial nerves have been involved. Characteristically there is early nerve involvement with mul-

tipple and consecutive nerves being affected. Usually it is unilateral. Due to hypophyseal compression endocrine disturbances are not uncommon as well as involvement of the optic chiasma and tracts producing field deficits. The expanding mass lesions of the clivus cause brainstem compression with involvement of the pyramidal tracts, cranial nerve nuclei and cerebellar peduncles. Nausea, vomiting, dizziness and tinnitus may occur. General signs such as emotional instability, lethargy may also occur. In nasopharyngeal lesions difficulty in breathing, a palpable mass and pain are most frequent.

Vertebral—Vertebral chordoma usually present with pain and sings and symptoms of cord compression or nerve root involvement. Those located in the cervical region will produce dysphagia and difficult breathing. A palpable mass will be present in a significant group on first examination.

Sacroccocygeal—Pain is most frequent in this group. It may vary from a dull aching localized discomfort to radicular or sciatica. This will be followed by constipation, rectal bleeding, urinary disturbance and the presence of a palpable mass in the sacro-coccygeal or rectal region.

Diagnosis

As previously stated, there are no pathognomonic symptom-complexes. However, in the presence of the aforementioned symptoms and radiographic evidence of a mass or bone destroying lesion in the areas discussed, chordoma should be considered. Some of the differential diagnostic possibilities are noted in Table 2.

Treatment

Surgical intervention for cranial chordoma has been most disappointing. X-ray therapy is not satisfactory nor feasible due to damage to adjacent vital structures. Zoltan and Fenyes,¹⁸ in 1960, steriotactically implanted radioactive yttrium-90 seeds into a speno-oc-

cipital chordoma. The patient experienced resolution of symptoms and was well nine months after the procedure. This procedure may offer some improvement in the current therapy of cranial chordomas.

The vertebral area also presents a difficult problem in the treatment of chordoma. Wide en bloc dissection is not possible in these areas due to the anatomical character of the vertebral column and cord. Wide en bloc dissection in most cases would result in loss of vertebral support and continuity. Large dose radiation to the cervical, vertebral and lumbar area can produce radiation injury to uninvolved neural structures with considerable loss of function.

TABLE 2

Diagnostics possibilities in chordoma

Cranial:

1. Nasopharyngeal carcinoma
2. Carcinoma of pituitary
3. Hypophyseal adenomas
4. Chranioopharyngioma
5. Meningioma
6. Sarcoma
7. Giant cell tumor
8. Sphenoid sinus tumor

Vertebral:

1. Spinal cord tumors
2. Neurofibroma
3. Hodgkin's Disease
4. Metastatic carcinoma
5. Osteomyelitis
6. Paravertebral abscess
7. Tuberculosis of spine
8. Sarcoma
9. Pagets disease of spine
10. Myeloma
11. Angioma of vertebrae
12. Hydatid cyst
13. Saccular aortic aneurysm

Sacroccocygeal:

1. Metastatic carcinoma
2. Colloid carcinoma of rectum
3. Tumors of female pelvic organs
4. Sarcoma
5. Teratoma
6. Spinal cord and nerve tumors
7. Pararectal abscess
8. Myeloma
9. Chondroma

The treatment of sacro-coccygeal chordoma is not without difficulty and is also not satisfactory. However, chordomas of this area are more susceptible to radical surgical excision and large dose radiation.

It has been demonstrated that the second and third sacral nerves are most concerned with rectal and bladder control.¹⁹ If the second sacral nerve bilaterally and the third sacral nerve on one side were preserved, urinary and fecal control would be maintained. Shackelford and Rhode²⁰ have described the technical aspects of surgical excision of sacro-coccygeal chordoma and preserving the sacral nerves (in most cases) and the rectum. They related that a cleavage plane could usually be developed between the tumor and the rectum thereby preserving the latter. Surgical aspects to be followed in en bloc resection of sacro-coccygeal chordoma include (a) unroofing of sacral canal before transecting the sacrum, and transplanting the second and third sacral nerves upward, (b) transecting the sacrum above all appearance of tumor, (c) wide excision of normal tissue, and (d) preservation of rectum.

Even though these tumors are radio-resistant it is currently stated by most medical advisers that radiation therapy is indicated. There is some disagreement concerning postoperative radiation. In a study by Rosenquist,²¹ postoperative radiation had no obvious effect. Most authors agree on preoperative radiation therapy. This also facilitates radical surgical excision. Currently X-ray therapy is being given in greater tumor dosages. Baker and Coley²² used a tumor dose of 4000 r in less than 30 days. Friedman²³ using two million volt X-rays and rotation technique gave a tumor dose of 7,200 r in 47 days. This technique is used in vertebral chordomas.

The most accepted method of treatment is early pathological diagnosis—usually a needle biopsy. A course of radiation therapy to the tumor preceding surgical intervention is initiated. After preoperative X-ray therapy a radical en bloc dissection is followed by postoperative X-ray therapy. These patients should be followed at three month intervals for evidence of reoccurrence.

The best results have been observed in en bloc surgical resections. X-ray therapy facilitates this when given preoperatively and

may have some effect in the postoperative period.

Prognosis

In general the prognosis is not good. However, there has been a case that survived 23 years. The duration of life from the onset of symptoms is as follows: cranial 2.5-3 years, vertebral 1.5 to 2 years, and sacrococcygeal 4-6.5 years.

CASE REPORTS

Patient No. 1

A 56 year old white male, admitted to the hospital for the first time on December 12, 1953, with the chief complaints of pain and tenderness in the rectal region for two years duration. Three months prior to admission he noticed for the first time a mass and swelling over the coccygeal area. This increased in size approximately two times over the ensuing three months. On rectal exam there was a two by two centimeter mass palpated. A needle biopsy of this mass was obtained. Pathological report was that of sacrococcygeal chordoma. There was radiographic evidence of osteolytic changes in the sacrum and a mass in the sacrococcygeal region. The patient refused surgery at this time. However, on 4/15/55 he was readmitted and palliative surgery was performed at this time. Postoperatively it was felt that the lesion had been excised in toto. He was readmitted on 5/8/58 for recurrence of sacrococcygeal chordoma. At this time he had his second palliative surgical procedure.

Patient No. 2

A 64 year old white male admitted to the hospital for the first time on 11/25/55 with a three year history of rectal pain and a two year history of urinary incontinence. Fifteen years prior to admission the patient

CHORDOMA

TABLE 3

Summary of 3 cases presented

Age	Sex	Race	Duration of Symptoms Prior to Diagnosis	Method of Diagnosis	Initial Symptoms	Location	Rectal Exam	Bladder Involvement	Neural Involvement of Legs	Treatment - Surgical	X-ray
56	M	W	2 years	Needle biopsy	Pain and tenderness over sacrum	Sacroccocygeal (Retro-sacral)	2 x 2 Cm mass	Urgency, distention difficulty starting stream	Decrease pain sensation	Excision 1953 1955 1958	X-ray
64	M	W	3 years	Needle biopsy	Rectal pain	Sacroccocygeal (Retro-sacral)	Negative	Neurogenic	Decrease pain sensation	No	X-ray (2787r)
63	M	W	1 month	Surgical biopsy	Rectal pain	Sacroccocygeal (Sacral)	1 x 2 Cm mass	Neurogenic	Paraplegia	Two surgical excisions	X-ray, Co & Au

received a traumatic fracture of the coccygeal bone. At the present admission there was swelling and intense density over the sacroccocygeal region, no mass was palpated on rectal exam. He had a neurogenic bladder, decreased pain sensation in lower extremity, osteolytic sacral changes on X-ray and a pathological diagnosis of chordoma was made by needle biopsy. The patient received 2,787 roentgens as palliative therapy in 23 days at a 12 cm. pelvic depth.

Patient No. 3

A 63 year old white male admitted to the hospital for the first time on 11/18/55 with a one month history of pain in the rectal area which initially was partially relieved by bowel movements. Rectal exam three weeks later revealed a palpable mass in the sacrum. Radiographic studies revealed a pelvic mass which was questionably attached to the sacral. During this hospitalization he had excision of coccyx and portion of the sacrum. A pathological diagnosis of sacral chordoma was made at that time. He did well for approximately two years, at which time he developed urinary incontinence and difficulty in having bowel movements. He was readmitted again on 2/5/58 with continuous pain and foot drop with difficulty in walking and a broad-based gait. He was readmitted on 2/10/58, at which time he re-

ceived radioactive cobalt and gold which was implanted within the tumor mass.

Table 3 summarizes the information on the three cases presented.

SUMMARY

A brief review of chordoma has been presented. The historical aspects and histogenesis of this tumor have been considered.

It is characterized by invasive qualities and recurrence with a complete cure unlikely at this time. Current management of these tumors includes a high degree of suspicion, pathological confirmation of tumor, preoperative radiation and wide en bloc resection in sacroccocygeal tumors followed by postoperative irradiation.

In vertebral and cranial chordoma a partial excision for palliation will be the rule. X-ray therapy will be indicated. Further work with beta emitting isotopes may offer a therapeutic adjunct.

Three previously unreported cases are presented.

At best the management of chordoma is difficult and its treatment should involve the quadruple efforts of the general surgeon, orthopedic surgeon, neurosurgeon and radiation therapist.

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Editorials

W. A. Dozier, Jr.

The Association has lost its first employee. William Alexander Dozier, Jr. has resigned as of the first of October, 1963. "Bill," as Mr. Dozier has been known among his many friends, served Alabama medicine for over fifteen years. He was the first trained business specialist hired to help the physicians meet their ever-increasing responsibilities. Since 1956 Bill has served as the first Executive Secretary of the Association.

Physicians have traditionally been thought of as servants to the public. For this they have been rewarded. Being good servants, they more acutely appreciate the skilled services of others. Bill Dozier has truly been a good servant to every physician in Alabama and, therefore, the benefactor of all the citizenry. It was not by accident that this transpired.

W. A. Dozier, Jr. received his A. B. and M. A. degrees from the University of Alabama. He did graduate work at the Harvard Graduate School of Business Administration. A close friend and roommate in college became an outstanding Alabama physician. Bill married the daughter of a famous Alabama physician. He was well oriented medically,

and being a native of Alabama he accepted the offer of the Association to be its first executive employee.

This was over fifteen years ago. Prior to that time, the business of the Association was meager. The demands upon organized medicine were met by the efforts of dedicated counsellors, members, and elected officers. Following the social and political upheavals brought to and generated in our country during and after World War II, it was evident that Alabama physicians needed skilled specialists in the fields of public relations and business administration. No longer could the most dedicated members efficiently handle the business of the Association. Alabama medicine, so to speak, had to keep up with the times. That they did.

Bill Dozier's first assignment was that of director of public relations for the Association. This job grew and grew until it was evident that Association business required additional skilled executive attention. Bill undertook the job. The *Journal* needed certain changes to compete with changing times. Bill took the job. The annual sessions needed special attention. Bill took the job. Legisla-

tion, public relations, co-ordinated committee activities, assistance to the Board of Censors, and travel for the Association all increased. Bill took the jobs.

There had been created an office force with moderate secretarial and clerical support for Bill Dozier. So, in 1957, the Association created the office of Executive Secretary. Bill filled that position. He drew around himself a most efficient and harmonious group of employees, all serving the Association. This has continued. Bill directed with firmness and efficiency. He asked of his group no more than he himself was giving. He exer-

cised his knowledge and skills and applied his superior education and training.

The Association will miss William Alexander Dozier, Jr. He has seen the Association through a crucial period of growth. He has departed at a young and prime age. Bill had his reasons for leaving. They are his own. His resignation was accepted with regrets.

Those who knew "Bill" best would agree that the following quotation from the Scripture would at this time provoke from him a typical Dozier smile.

"Lord, now lettest thou thy servant depart in peace."

LSD-25 AND SIMILAR DRUGS CAN CRIPPLE MIND

LSD-25 and similar drugs that drastically alter sensory perception have the power to permanently cripple the mind, an editorial in the current (Sept. 14) Journal of the American Medical Association warned today.

Accumulating evidence "demonstrates beyond question that these drugs have the power to damage the individual psyche, indeed cripple it for life," according to the editorial signed by Dr. Dana L. Farnsworth, Cambridge, Mass.

So far, Dr. Farnsworth said, there is no way to distinguish between persons who can take the drugs safely and those who may be led into a prolonged, perhaps permanent, psychosis. The effect of the drugs upon the same person also appears to vary a great deal from one drug experience to another, he said.

"The ingestion or injection or inhalation of any agent taken or given to alter a person's usual mental and emotional equilibrium must be looked upon as a medical procedure," he said.

"These agents should, therefore, be under medical control and, as with other potent drugs, should be dispensed only on prescription written by licensed physicians, with due

warnings as to the risks involved. Provision, however, must be made for their employment for experimental purposes by responsible investigators under proper medical supervision."

Dr. Farnsworth challenged the claim that these drugs "free" the mind for creative work saying, "up to now we have had any amount of rhapsodic talk and writing, but no responsible proof."

A dangerous situation is developing because public interest in these drugs is on the increase in many parts of the United States, he said.

"Many men and women who should not do so, especially college students, are experimenting with hallucinogens," he said.

Even small amounts of these drugs have resulted in the hospitalization of some students for long periods, Dr. Farnsworth pointed out.

In one instance, he said, a student spent a whole day living the nightmare that he was only six inches tall after taking one of these drugs. Another student after one ingestion of LSD-25 spent several days in bed, either babbling or crying and for some weeks after-

ward was subject to horrid involuntary hallucinations, he said.

Research projects were criticized by Dr. Farnsworth in which little attention is paid to "precautions that any responsible investigator would demand." Studies in which experimenters take a drug at the same time they are studying its effects in others cast a "shadow on the work of responsible investigators," he said.

However, uncontrolled and uncritical experimentation should not be allowed to create

an hysterical attitude which could result in unwarranted restrictive legislation, he said, adding:

"Responsible research on these and similar substances is vital and must go on."

Dr. Farnsworth also pointed out that a black market in these drugs flourishes in some areas and that the AMA Council on Mental Health urges all physicians to help prevent the improper use and unwise distribution of these drugs in their communities.

PROFESSIONAL LIABILITY GROUP PLAN

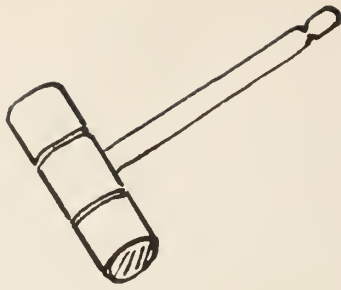
The Committee on Insurance of the Medical Association of the State of Alabama has recently completed negotiations to place the professional liability group plan with The Aetna Casualty and Surety Company. For some time now Liberty Mutual has been the carrier for this plan. Recently this company gave notice to the Committee that it planned to terminate the contract with the Association. This decision was made by Liberty Mutual because they felt that the experience for the Association revealed a high ratio of loss. Your Insurance Committee, therefore, was put in the position of having to negotiate with another carrier on very short notice. The Committee met with numerous company representatives and, after lengthy and careful consideration, decided to place the plan with Aetna.

It is to be expected when any change is made that affects a large segment of the physician population that there will be questions not clearly answered to some. At this writing over 95 per cent of those physicians participating in the group plan have been successfully transferred to the new carrier. It is to be emphasized that any agent for Aetna in the state of Alabama may write this coverage for any Association member, and he can be assured that he is definitely covered under the group plan.

Recently, the National Bureau of Casualty Underwriters, which sets certain standards for insurance companies throughout the nation, announced a rate revision and also a change in classification of physicians for rate purposes. At that time, the rates for 17 states were raised, one lowered, and the rest left unchanged. Alabama, which has the distinction of having rates near the bottom of the list, was one of those left unchanged. Until this year physicians were classified as either physicians or surgeons, but now there are four classifications, each having a different rate.

Your Insurance Committee has always felt a binding responsibility to the physicians enrolled under the Association's plan. Every effort was made to place the plan with a company which would not only offer rates comparable to other companies writing this type coverage but would also possess a reputation which would insure positive and adequate protection to its policyholders.

It is impossible to answer all questions and explain every facet of such a program in one article such as this. Your committee welcomes the opportunity to answer any questions or to supply any information to the members of our Association.



President's Page



J. A. Brantley, M. D.
Vice-President

There are so many articles now that foretell the doom of general practice. They say that young men are no longer going into general practice and that it might be just as well because general practice is a thing of the past. They say that public sentiment in favor of the family doctor is just a form of nostalgia, and it is claimed that specialization and group practice have combined to outmode the general practitioner.

Who, then, will coordinate medical practice? To whom will the patient turn because of abdominal pain? To the gynecologist, or the surgeon, or the internist? Or perhaps to all three, one after the other? I think of the general practitioner as being somewhat comparable to the foreman of a building crew that includes carpenters and brick masons and metalsmiths etc. The plumbers know much more about plumbing (and may earn

more) than the foreman. The plasterers know more about their specialty but little about plumbing. The foreman has a working knowledge about the whole project and is in a better position to coordinate.

Who will look after the children? Ideally, the pediatrician (who is a general practitioner for a certain age group). But there aren't enough pediatricians to go around, and there never will be. The specialists will handle the blood dyscrasias, and the major surgery, and the unusual disorders. But who will worry about the feeding problems and acute infectious diseases and the anxious mothers who phone at all hours.

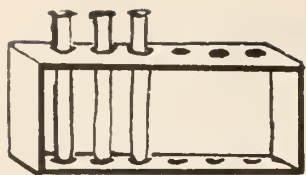
What about the small towns? There are many towns of 5,000 to 10,000 population that cannot support specialists or groups. Who will do the family practice there? Some say that the internist should be heir to the family practice. But if he repairs a laceration or reduces a fracture or delivers a baby, he is no longer an internist. He is a general practitioner. The internist is a finely honed medical detective who is trained to search for the unusual and baffling causes of disease. He takes up after the general practitioner has failed by the usual methods to establish the cause of disease, and the internist is not

particularly adapted to the handling of the various and sundry conditions that are encountered daily in the general practitioners office.

Some say that "The Group" is the answer. It is claimed that a patient going to a group can obtain the advice of a number of specialists and that they are bound to know more, collectively, than a lone practitioner. They say that group practice isn't impersonal either and that the doctors aren't "organization men" as some might think. The expense to the patient is greater. And one cannot escape the "assembly line" attitude and the feeling that this is a step toward government medicine.

There will always be a place for the individual general practitioner. He can be compared to the battalion surgeon. He is right behind the firing line. He sees all the casualties as they come in. Those that cannot be handled adequately by his skill and the facilities present are transferred to the appropriate hospital. The general practitioner sees the patient first and guides his future course. Who is to take his place?

J. A. Brantley, M. D.
Vice-President



STATE DEPARTMENT OF HEALTH

GOOD SHELLFISH REQUIRES VIGILANCE

There are many problems that affect the oyster industry in the state of Alabama, one of which is the quality of the oyster growing waters. The task of maintaining an acceptable quality of water over the oyster producing areas of Alabama is a demanding one involving the cooperative efforts of regulatory agencies, municipalities and others. The quality of water is not necessarily the only factor to be considered in placing a safe product on the market. Infectious hepatitis and other diseases may be transmitted by oysters not only from the waters from which they are taken, but also by improper handling. Oysters provide an excellent medium for growing bacteria and are easily contaminated by improper handling including shucking.

Although oysters for human consumption are taken from clean waters, they can be easily contaminated in handling. Mishandled shellfish which are not iced or refrigerated from the time they are gathered until the packing process begins will multiply their contamination. Oysters should be refrigerated immediately after being taken from warm waters, and during the time of handling, processing, storage and shipping.

Safe shellfish is the aim of a joint project of the Alabama Department of Public Health's Bureaus of Laboratories and Sanitation. This project is directed toward an extensive study of Mobile Bay waters. The bay area is under constant surveillance for pollution. Samples are collected at stations in the bay and shipped under refrigeration to the laboratory where bacteriological examinations are made for coliform density. Fresh oysters are examined to determine their safety. The state laboratory research on oysters includes determination of types of bacterial growth and the effects of time

and temperature as to the handling, shucking and packing of the finished product. The bacteriological examination and determination of liquid content of packaged oysters found in systematic sampling allows the Division of Inspection to take prompt corrective measures against oyster shippers violating established standards of quality.

To conserve this most important source of sea food oysters are being moved from beds unsuitable for harvesting to other areas of the bay.

Another means of assuring the safety of shellfish is a decrease of sources of pollution by providing for the proper disposal of sewage for these areas.

A records system has been initiated which requires each individual oyster shucking plant to record the source and distribution of all oysters processed. This record, properly maintained, provides a method of tracing oysters to their point of origin, should the need arise.

The first permanent shellfish laboratory was recently opened in Alabama. This federal research center will investigate pollutants of the coastal estuaries and mechanisms governing the amounts of pollutants the shellfish take in and retain. Laboratory officials plan the development of more reliable laboratory techniques and methods for detecting and measuring in shellfish the presence of biologically active substances. The resources of the research center will be available in the training of state and federal sanitation specialists in new laboratory and field techniques.

Effective inspection and supervision of the shellfish industry are being accomplished, and necessary controls are exercised to insure that a safe product reaches the consuming public.

DEPARTMENT OF HEALTH

BUREAU OF LABORATORIES

Thomas S. Hosty, Ph.D., Director

August 1963

Examinations for intestinal parasites.....	371
Typhoid cultures (blood, feces, urine and other).....	426
Brucella cultures.....	0
Examinations for malaria.....	3
Examinations for gonococci.....	1,585
Serologic tests for syphilis (blood and spinal fluid).....	24,878
Agglutination tests.....	1
Darkfield examinations.....	0
Examinations for diphtheria bacilli and Vincent's.....	32
Examinations for Negri bodies (smears and animal inoculation).....	224
Water examinations.....	2,776
Milk and dairy products examinations.....	3,778
Examinations for tubercle bacilli.....	3,650
Miscellaneous examinations.....	4,274
Total.....	41,998

✻ ✻ ✻

BUREAU OF PREVENTABLE DISEASES

W. H. Y. Smith, M. D., Director

CURRENT MORBIDITY STATISTICS

1963

	July	Aug.	*E. E. Aug.
Tuberculosis.....	99	148	186
Syphilis.....	149	102	144
Gonorrhea.....	381	423	387
Chancroid.....	3	1	3
Typhoid fever.....	0	4	3
Undulant fever.....	1	2	1
Amebic dysentery.....	7	4	3
Scarlet fever and strep. throat.....	48	26	27
Diphtheria.....	1	0	4
Whooping cough.....	23	20	33
Meningitis.....	3	2	9
Tularemia.....	0	0	0
Tetanus.....	2	1	2
Poliomyelitis.....	12	20	14
Encephalitis.....	0	0	1
Smallpox.....	0	0	0
Measles.....	34	19	48
Chickenpox.....	16	2	3
Mumps.....	69	17	20
Infectious hepatitis.....	53	46	29
Typhus fever.....	0	1	1
Malaria.....	0	0	0
Cancer.....	627	809	474
Pellagra.....	1	1	0
Rheumatic fever.....	11	9	8
Rheumatic heart.....	25	35	20
Influenza.....	15	5	32
Pneumonia.....	112	103	125
Rabies—Human cases.....	0	0	0
Pos. animal heads.....	1	1	0

As reported by physicians and including deaths not reported as cases.

*E. E.—The estimated expectancy represents the median incidence of the past nine years.

BUREAU OF VITAL STATISTICS

Ralph W. Roberts, M. S., Director

PROVISIONAL BIRTH AND DEATH STATISTICS, AND COMPARATIVE DATA, JULY 1963

Live Births Deaths Causes of Death	Number Registered During July			Rates* (Annual Basis)		
	Total	White	Non- White	1963	1962	1961
Live Births.....	6,588	4,072	2,516	23.0	24.0	25.1
Deaths.....	2,428	1,577	851	8.5	9.0	8.7
Fetal Deaths.....	150	63	87	22.3	21.6	20.3
Infant Deaths— under one month.....	149	82	67	22.6	18.4	22.9
under one year.....	196	100	96	29.8	25.5	29.7
Maternal Deaths.....	8	4	4	11.9	7.3	8.3
Causes of Death						
Tuberculosis, 001-019.....	21	11	10	7.3	8.9	6.8
Syphilis, 020-029.....	3	—	3	1.0	2.1	2.5
Dysentery, 045-048.....	2	1	1	0.7	1.4	0.4
Diphtheria, 055.....	—	—	—	—	—	0.4
Whooping cough, 056.....	—	—	—	—	0.4	0.7
Meningococcal infec- tions, 057.....	2	2	—	0.7	0.4	—
Poliomyelitis, 080, 081.....	—	—	—	—	—	0.4
Measles, 085.....	—	—	—	—	—	—
Malignant neo- plasms, 140-205.....	327	234	93	114.2	129.0	118.3
Diabetes mellitus, 260.....	47	28	19	16.4	11.4	9.3
Pellagra, 281.....	—	—	—	—	—	0.4
Vascular lesions of central nervous system, 330-334.....	323	197	126	112.8	126.8	125.0
Rheumatic fever, 400-402.....	1	—	1	0.3	0.4	—
Diseases of the heart, 410-443.....	781	548	233	272.7	315.3	291.4
Hypertension with heart disease, 440-443.....	130	59	71	45.4	54.9	40.2
Diseases of the arteries, 450-456.....	45	35	10	15.7	18.5	15.7
Influenza, 480-483.....	2	—	2	0.7	1.4	0.4
Pneumonia, all forms, 490-493.....	64	34	30	22.3	21.0	15.7
Bronchitis, 500-502.....	4	4	—	1.4	1.1	0.7
Appendicitis, 550-553.....	3	2	1	1.0	0.7	1.4
Intestinal obstruction and hernia, 560, 561, 570.....	9	6	3	3.1	2.8	5.0
Gastro-enteritis and colitis, under 2, 571, 0, 764.....	8	2	6	2.8	4.3	2.8
Cirrhosis of liver, 581.....	16	11	5	5.6	5.0	6.1
Diseases of pregnancy and childbirth, 640- 689.....	8	4	4	11.9	7.3	8.3
Congenital malforma- tions, 750-759.....	30	23	7	4.5	3.4	3.7
Immaturity at birth, 774-776.....	47	24	23	7.1	5.0	8.1
Accidents, total, 800-962.....	199	134	65	69.5	62.7	66.6
Motor vehicle acci- dents, 810-835, 960.....	108	83	25	37.7	26.7	26.7
All other defined causes.....	375	234	141	131.0	127.2	131.1
Ill-defined and un- known causes, 780- 793, 795.....	111	43	68	38.8	37.4	34.6

*Rates: Birth and death—per 1,000 population

Infant deaths—per 1,000 live births

Fetal deaths—per 1,000 deliveries

Maternal deaths—per 10,000 deliveries

Deaths from specified causes—per 100,000 population

The Woman's Auxiliary

Whoa! Back Up A Minute!

Join me in exploring a phase of our Auxiliary program. It's a good one because you and your Auxiliary counterpart have helped make it so. And, I am referring to AMA-ERF.

What is it?

I could say it is the American Medical Association Education and Research Foundation and let it go at that. But, let's think of it as *people*—you and I—working to provide financial aid to our medical schools and aiming to better public health through scientific and medical research.

AMA-ERF has two major programs:

1. *Funds for medical schools:* The Deans welcome voluntary contributions with no strings attached, and this is what we give them. With a ten million dollar annual operating deficit in our medical schools, you can see the real need for funds.
2. *Loan Guarantee Fund:* This plan simply provides a guarantee by us, making it easier for medical students to borrow needed funds to complete training. They get nothing free, for it must be repaid. Do you know that nearly one of every ten medical students in this country has borrowed under this plan?

Last year, the Woman's Auxiliary to the Medical Association of the State of Alabama gave nearly \$10,000 to the AMA-ERF. We are proud of that but want to do better. And, as always, we need you gentlemen. There are various means of raising monies, and some you are familiar with. Playing

cards and the sympathy and appreciation cards are two. To that has now been added note paper, specially designed and inscribed.

In our fund raising this year, let me emphasize the Christmas Card Plan, for it is a real corker. Counties who used it last year did wonderfully well. Whatever innovations are made, the plan basically takes on the task of securing, addressing, and mailing your cards. Ask your wife or an Auxiliary member if she intends using this plan; and if not, perhaps you will put the bee in her bonnet.

Speaking of bees, we think this is the "bee's knees"—our state charm. I'll just bet the love of your life has or wants a charm bracelet; so for a special occasion like Christmas, why not surprise her with one. The charm may be ordered in:

14 K. gold.....	\$15.00
10 K. gold.....	\$10.00
1/10 K. gold.....	\$ 8.00
Sterling silver.....	\$ 7.00

A terrific gold-emblem-encrested compact is also available for \$12 and a sterling silver emblem-topped slimline lighter for \$13.75. All these can be secured through me, Mrs. Curtis A. Smith, 79 Byrnes Boulevard, Mobile 8, Alabama, by making your check out to AMA-ERF Auxiliary Fund.

There they are—our aims and plans for AMA-ERF. With your concern and interest we look ahead to a banner year.

Mrs. Curtis A. Smith
AMA-ERF Chairman

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CHEMEXFOLIATION IN THE AGING SKIN

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Daytona Beach, Florida

The age old desire of men and women to remain young and their abhorrence of the aging process as it progresses relentlessly onward, especially on their own features, has led to many quests for stopping or reversing this inexorable process. In today's world where the accent is on being young, a youthful appearance is almost mandatory in many occupations. In fact, it is often an economic necessity and frequently its lack becomes a social handicap as well.

The search for a means to relieve or cure this problem is undoubtedly older than recorded history. The ancients employed topical medicaments and also ingested bizarre concoctions in attempts to restore lost youth. The fountain of youth or its equivalent has been sought for in every age.

Dr. Sperber is a graduate of New York University Medical School. He trained at Bellevue Hospital, New York City Hospital, and Correction Hospital, New York. He is engaged in the practice of dermatology.

Today, cosmetics and rejuvenating creams are purchased eagerly by a frantic public. Sales reach hundreds of millions of dollars yearly.

To improve the cosmetic appearance of the aging skin, modern professional methods employ plastic surgery, dermabrasion, cryotherapy, electrosurgery, and recently there has been a tremendous interest in cutaneous chemosurgery. All these measures have their advantages and limitations.

Cosmetic plastic surgery improves the appearance of the face and neck. However, it fails to remove the wrinkles about the eyes and mouth and certainly does not improve skin texture.

Dermabrasion has drawbacks also, in that, it cannot be well utilized about the nose and eyelids, causes color discrepancy with untreated skin, and does not give good textural improvement of the skin.

However, certain chemolytic and chemo-coagulating agents acting upon the surface

protein, keratin, produce keratolytic and keratocoagulating effects which result in cutaneous improvement not obtainable, at present, by any other known methods of treatment. Chemical plastic surgery or Chemosurgery can be employed all over the face thus avoiding different colored hues on the face between treated and untreated areas.

Chemosurgery is a general term. I believe the term is too all embracing and general in its connotation and so have suggested the term "Chemexfoliation"* to apply to this specialized field where chemical peeling is used to produce a cosmetic therapeutic effect. The term "Chemexfoliator" designates the chemical agent used and the resulting cutaneous reaction between the integument and chemicals produces the "Chemexfoliant."

Chemexfoliation in various degrees has been part of the armamentarium of dermatologists for many years. However, this process has not been widely accepted by dermatologists in the past for purposes of rejuvenation of the face and neck.

Lay operators in Europe and the U. S. A. have taken the initiative in such usage. However, their inadequate knowledge of the pharmacologic, toxicologic, and dermatologic properties of their agents has led at times to tragic results. Chemexfoliation should be performed only by physicians, not laymen. These doctors should have adequate training in the technique of this procedure, thereby avoiding many of the pitfalls experienced by the untrained operator.

In searching the medical literature, some earlier reports on chemexfoliation were noticed. Urkov¹ conducted a method of controlled exfoliation using salicylic acid, resorcinol, and lactic acid under an occlusive dressing of rubberized adhesive. This procedure was troublesome, tedious, and painful, although apparently effective. Urkov described this as superficial exfoliation. Deeper exfoliation was accomplished by the application of

tincture of cantharidin, also under an occlusive dressing. He used liquefied phenol to treat wrinkles and acne scars, subsequent to cantharidin treatment.

MacKee and Karp² reported their results with liquefied phenol therapy which they had used satisfactorily for many years. The authors encountered no phenol sensitivity or any other untoward reaction. Blood and urine examinations gave no evidence of abnormalities. Their histologic studies showed collagen hyperplasia with a more horizontal arrangement of the collagen bundles.

Because phenol is known to be a dangerous escharotic and has, on occasion, been responsible for severe systemic toxic effects, Combes, Sperber and Reisch³ felt it was necessary to control phenol activity more fully in order to produce a safer agent for performing chemical plastic surgery. They devised and used, on over 200 patients, a buffered dermal chemical exfoliant containing 85 per cent phenol. Burns or cicatrices, ordinarily seen when using liquefied phenol, were not observed in these patients. The general texture of the skin was improved and in addition there was tightening of the facial contours. The rhytides about the eyes and the corner of the mouth were either ablated or markedly improved. The facial lines of expression usually became shallower. In addition, it was noted that acne scars were ameliorated, superficial hyperpigmentation was reduced, and comedones and simple keratoses were removed.

Combes, Sperber, and Reisch made free and conjugated phenol blood determinations on patients before and after treatment with buffered phenol. Determinations were also made on the urine for total and conjugated phenol and paracresol. When limited skin areas were treated with the buffered phenol solution there were no significant changes in blood or urinary phenols. In those patients whose skin surface area was in excess of 160 sq. cm., there was a definite temporary increase in blood and urinary conjugated phenols but no evidence of cytologic blood changes or evidence of kidney irritation. Urinalyses, blood urea

*Sperber, P. A.: Chemexfoliation: A New Term in Cosmetic Therapy. *J. Amer. Geriatrics Society* 11: 58 (Jan.) 1963.



FIGURE NO. 1

Female aged 43—Aging skin with coarse texture, many lines, and pigmentation of face. Below photos after Chemosurgery show improved texture of skin, diminution of pigmentation, lines in face are softer, and some lines have disappeared.

studies, liver function tests, and hemograms showed no significant changes.

The chemicals which have been generally used as exfoliants are phenol, resorcinol, and trichloroacetic acid. Our investigation of resorcinol showed that it was a superficial chemexfoliant and would not produce the deep beneficial chemexfoliating effects that were sought in this type of treatment. Trichloroacetic acid on the other hand, a powerful caustic agent, produced much deeper destruction than phenol. Because of this property it was more apt to create hypertrophic scars. For these reasons, our efforts were directed

mainly to the use of a modified phenol solution.

Phenol, known chemically as monohydroxyphenol, is essentially a keratocoagulant. Many dihydroxyphenols, trihydroxyphenols, and hydroxynaphthalenes have keratolytic properties in higher concentration. Resorcinol and pyrogallol are examples of these compounds. However, pure phenol is caustic and in high concentration coagulates the surface keratin proteins, combining with them to form larger molecules with new physical chemical properties which are not absorbed percutaneously as easily as free phenol. Dilu-

tion of free phenol increases absorption. Rothman⁴ states that a caustic chemical in high concentration is absorbed in smaller amounts from the skin than the same agent when applied in lower concentrations. Eller and Wolff,⁵ and Macht,⁶ substantiate the safety of concentrated phenol when applied to restricted areas of the skin in contradistinction to the dangers of the absorption attending the application of dilute solutions. Brown, Kaplan and Brown⁷ also confirm this finding.

When phenol is absorbed into the blood stream it is oxidized to form hydroquinone and pyrocatechin. The remaining phenol is either excreted as free phenol or conjugated with glucuronic or sulfuric acid.

Normally free phenols⁸ are present only in traces in the blood, if at all. Conjugated phenols are present in the urine in amounts ranging from 20 to 70 mg. per day, and are apparently not altered by dieting or fasting. Pathologic increases in conjugated phenols have been noted in extensive tissue destruction or intestinal obstruction.

When phenol is handled improperly, it may be a very dangerous agent. It locally exerts a strong corrosive action on body tissues and can produce severe systemic reactions after absorption through the skin, mucous membrane, gastrointestinal tract or lungs. The signs and symptoms of acute toxicity from phenol absorption may appear within a few minutes, or 20 or 30 minutes after exposure. Among the symptoms observed are, profound muscular weakness, dizziness, headache, ringing of the ears, dimness of vision, tingling of the hands or feet, irregular and rapid respiration, difficult breathing, and a weak pulse. Occasionally there is mental confusion, muscular twitching, loss of consciousness, and in rare cases, death from respiratory failure. Any or all of these symptoms may be noted.

In view of the fact that phenol toxicity must be avoided, it is necessary that phenol absorption from the skin be reduced to a minimum. This may be accomplished in several ways. 1) The higher the concentration of phenol used, the more keratocoagula-

tion will be achieved in the skin, thereby reducing absorption of free phenol. 2) If the skin is treated very slowly, the amount of phenol absorption at any one particular time is small. This fact can be confirmed by clinical observation as well as laboratory testing. 3) By the avoidance of occlusive dressings or strapping, one may assume that less phenol is absorbed from the skin. 4) A point, often disregarded when applying phenol to the face, is that there is also absorption by inhalation. Treatment must be administered in a well ventilated room. An exhaust system should be used to remove phenol vapor. I feel this is a worthy precaution both for the patients and the working personnel.

SELECTION OF PATIENTS

Several important points should be considered before a patient is ready for chemexfoliation. 1) A history should be taken, and then a physical examination made on each patient, so as to determine his or her neuropsychiatric makeup and general health. Special attention should be directed towards eliciting any past history of renal or hepatic disease. Laboratory tests should be performed as indicated, and urine analyses done routinely on each patient. After this workup is completed, the physician has to decide whether or not to accept the patient for chemexfoliation. 2) If the patient is accepted, a clear agreement in writing between the patient and doctor is necessary. This agreement should contain a release from the patient, state the hazards of the treatment and emphasize the absence of any guaranteed results. 3) Photographs must be taken of all patients. These photographs should be adequate and include front, side and any oblique views of the face or neck necessary to bring out all points in question.

TECHNIQUE AND RESULTS

Various types of phenol solutions have been used in the past. The most common one has been liquefied phenol which is composed of 88 per cent phenol and 12 per cent water. Preparations have also been used in which



FIGURE NO. 2

Female aged 72—Aging skin with marked pigmentation, poor texture and ptosis. Lower photos show patient after Chemosurgery. Notice more youthful appearance, reduction in pigmentation, smoother texture and tightening of skin.

the phenol content ranged from 30 to 90 per cent.

The dermal chemexfoliator that I originally used contained 85 per cent phenol. Since then a number of new modified phenol solutions have been prepared which I have used satisfactorily. A typical solution is as follows:

Phenol	—15.000
Sod. Salicylate	— .050
Camphor	— .025
Anhydrous Glycerine	— 1.250
Ethanol (100%)	— .500

This solution contains approximately 90 per cent phenol.

An open patch test is performed on the skin with the chosen chemexfoliator. The material is applied to the test area, usually the thin skin of the arm, and the resulting reaction is carefully studied for hypersensitivity, and also for the degree of inflammatory response which may act as a guide in treatment.

Our treatment is an office procedure. The patient is usually premedicated with a tranquilizer and an analgesic. Methadon is injected just prior to the beginning of treatment.

The skin is cleansed to remove surface debris and oils, after which the chemexfoliator is applied with round, cotton wrapped, wooden applicators which we call brushes. These round brushes, because of their rolling qualities, permit a more uniform application of solution to the skin. Smaller and finer applicators are used for the eyelids, nose, cutaneous portion of the lips, wrinkles, and lines.

The amount of solution to put on the brushes, and the know-how of application, is acquired with experience. The brush must not be too wet, otherwise one cannot control the local reaction, and in addition there is the possibility of having uncontrolled cauterant running down the face or neck. Excessive solution is removed from the brush by "stripping" it against the side of the glass container. Depth of penetration is controlled by the concentration of the chemexfoliator, the amount applied to the skin, and the use of cotton pledgets or absorbent tissues to remove quickly any excessive solution from the skin surface.

The face is treated first, beginning with the forehead and ending with the eyelids. Treatment should progress slowly and carefully with frequent waiting periods. It may be completed in one or two days depending upon the patient's age, general condition, and response to therapy. The neck is treated at a separate session.

No taping is used with this method. It is, therefore, an open or nonocclusive procedure. Exfoliation commences in a few days. There is a minimum of discomfort, in contrast to the taping method which employs an impermeable plastic adhesive to cover the treated areas of the face. When the tape mask is removed, the adherent outer layers of the skin are also removed, leaving a macerated exuding surface which is then powdered with thymol iodide and dries, forming a hard crust. This eschar separates in about a week. I believe taping adds nothing to the final result, causes needless discomfort, but may have some psychological effect on the patient.

After the chemexfoliator is applied, the color of the skin quickly turns white. This

is caused by rapid keratocoagulation. Within a short time an inflammatory reaction follows and the skin turns a dusky red, changing to a brownish coloration in the next day or two.

The chemexfoliant or crust is softened with bland oils or emollients in which antibacterial agents, such as Neomycin,[®] are often incorporated. In variable degree, there may be serous exudation, pruritus, and fissuring. The latter is most apt to occur on the eyelids, corners of the mouth, and creases of the neck. If indicated, steroid therapy, topical or systemic, is used to control these symptoms. Infection, when present, may be treated by local and/or systemic antibiotic therapy.

Exfoliation is fairly well completed between the eighth and twelfth day after chemotherapy; at times it may take three weeks. The residual erythema and edema gradually disappear in several weeks.

Histological examination of the phenol treated skin shows destruction of the epidermis and upper dermis. A new epidermis is regenerated in approximately a week from the cutaneous adnexa and replaces the necrotic epidermis which is cast off in four to 14 days. Dermal healing follows in several weeks. A new dermis with increased collagen deposition, in horizontal configuration, accounts for the improvement noted in the new skin, namely tightening of the facial contours, improvement in the appearance of lines and wrinkles, and a softer more elastic texture.

The procedure may be repeated in whole, or in part, to achieve maximum improvement and also to retain or restore the benefits previously achieved. Adequate time must, however, be allowed for improvement before treatment is reinstituted, especially in the initially treated patients. Following chemexfoliation, there is a temporary improvement in appearance due to postprocedural swelling of the integument. This gain is lost with subsidence of the edema, and then the longer lasting benefits of the treatment begin to appear. Improvement in the aging skin patient may last for five years or more as evidenced by observation of our earliest patients.



FIGURE NO. 3

Female aged 64—Aging skin with some pigmentation, poor texture and ptosis. Lower photos show patient after Chemosurgery. Patient has younger appearance, smoother texture, tightening of skin and reduction of pigmentation.

The skin of the face, because of its being richly supplied with cutaneous adnexa, responds better to chemexfoliation than other areas with thin skin and poorer adnexa such as the neck, backs of the arms, forearms, and hands where scarring is more apt to occur. Chemotherapy and dermabrasion must be used, therefore, more cautiously and carefully in these regions. Chemexfoliators, of a milder nature, are suggested for the "thin skin" areas.

DISCUSSION

The benefits of chemexfoliation in the aging skin are listed below:

- 1) Patients generally have a more youthful appearance. In some cases the individual looks ten, fifteen or twenty years younger.
- 2) The skin appears firmer, smoother, and more elastic. The texture is softer and the facial contours are tighter.
- 3) There is marked reduction or elimination of the fine and moderate wrinkling about the eyes, mouth and cheeks. The skin of the eyelids becomes firmer and tighter. Elimination or diminution of crow's feet is noted along with a reduction in redundancy of bags or pouches beneath the lower eyelids along



FIGURE NO. 4

Female aged 70—Aged and wrinkled with Keratotic skin. Lower photos show patient after Chemo-surgery. Note younger appearance of patient with finer smoother skin texture and clearing of wrinkles and Keratoses.

with disappearance or decrease of the infraorbital wrinkles.

4) The nasolabial lines, vertical and horizontal lines of the cutaneous portion of the upper lip, vertical lines of the lower lip, radial lines around the mouth and chin may be satisfactorily improved. Amelioration may also be noted in the preauricular lines, horizontal and frown lines, paranasal and nasal lines.

5) There is firming and tightening of the cervical skin with improvement in the slack and crepiness. Cervical lines are frequently improved. Severe actinic degenerative

changes in the cervical skin and V of the upper chest are less favorably influenced.

6) The skin of the hands, forearms, and arms reacts favorably to therapy.

7) Freckles, lentigenes, and chloasma are responsive to this treatment.

8) Weather beaten and actinically damaged skin is often substantially improved.

The benefits of chemexfoliation are gratifying in acne scarring.* Depressed scars become shallower and smaller. Pitted scars tend to fill and close.

*Sperber, P. A.: Chemexfoliation in Treatment of Acne Scarring. Texas State Journal of Medicine 59: 496 (June) 1963.



FIGURE NO. 5

Female aged 70—Above photos followed Plastic Surgery. Note deadpan appearance and poor skin texture. Lower photos show results after Chemosurgery. Improvement in skin texture and lines. Livelier expression.

Plastic surgery and chemexfoliation may be complimentary. When there is excessive redundancy of the skin of the face and neck (as for example in marked sagging of the eyelid skin, infraorbital bags, jowls, wattles, and generalized dermoptosis) a face lift (rhytidectomy) may be needed initially to be followed later by chemexfoliation. If dermoptosis is not too severe and is treated by chemexfoliation alone, it is often astonishing to see how much firming up of the skin will take place.

Complications in cosmetic chemosurgery due to phenol toxicity, are minimized by the

use of concentrated buffered anhydrous phenol formulae. Frequent urine examinations have failed to disclose renal irritation or the presence of phenol in the urine after approximately 1500 treatments. However, I have found positive ferric chloride tests for phenol in a few patients prior to therapy and these findings continued while the patients were observed. Some substance other than phenol in the urine is probably responsible for this reaction. Failure to test the urine for phenol before therapy, would have led the observer to conclude erroneously that phenol

was retained for a long period of time in the body.

Scarring is a potential hazard when any mechanical (dermabrasion) or caustic (chemosurgical) procedure is applied to the skin. A knowledge of the anatomy of the skin to be treated and also an awareness of the full capabilities of the chemical agents to be used should minimize greatly the possibility of scarring. A buffered anhydrous phenol chemexfoliator is a much less caustic agent than trichloroacetic acid and therefore less apt to cause scarring.

Pigment changes may, as with dermabrasion, follow chemosurgery. Hyperpigmentation can occur if the new skin is exposed prematurely to the sun. Therefore, sun exposure should be avoided for two or three months following chemexfoliation. In some patients there is a tendency to excessive pigmentation and hyperpigmentation may result on this basis. In time, excessive pigmentation disappears, however therapy can be instituted to hasten its departure. If a treated area becomes hypopigmented, the adjacent area can also be treated so as to blend the colors. To avoid such discrepancies full faces and/or necks should be treated.

CONCLUSIONS

Chemexfoliation (cosmetic chemosurgery), when properly used, is an effective procedure for improving aging, wrinkled, weather beaten, actinically damaged, and acne scarred skin. The skin, after treatment, has a more youthful appearance and patients often look many years younger.

As a result of chemexfoliation there is improved texture of the skin with tightening of the facial contours, wrinkles (rhitides) may be fully or almost completely ablated.

Lines, creases, and dermoptosis may be satisfactorily improved.

Excessive pigmentation, ephelides, and lentigenes often respond favorably to chemexfoliation.

Retreatment is used to attain further improvement or to retain or restore the benefits previously achieved.

Complications such as toxicity and scarring may be minimized by proper choice of chemical agents and cautious use on the skin always with full cognizance of the variation in cutaneous anatomy.

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SPONTANEOUS

HEMOPNEUMOTHORAX

by

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Spontaneous hemopneumothorax is a collection of air and blood occurring in the pleural cavity without evidence of trauma. While the occurrence of spontaneous pneumothorax is by no means an uncommon event, the complication of the more serious associated massive hemorrhage into the pleural cavity is relatively infrequent. Bleeding to some degree is said to occur in three to 12 per cent of all spontaneous pneumothoraces, yet only about 150 cases in which massive bleeding has resulted have been reported.¹ A need for wider recognition of the possibility of this potentially grave condition has prompted this review.

Although Pitt, in 1900, is usually given credit for the first published report and for the present day name of spontaneous hemopneumothorax, there are earlier reports by Lannaec in 1830, and Whitaker in 1876, which describe the same condition.³

The entity is most often seen in white males. Only about a dozen cases in women

and only two cases in negroes have been reported.^{1,2} The age span has ranged from 17 to 56 years with the majority being seen in the third and fourth decade of life.²

Etiology

Most authors are of the opinion that the etiology of spontaneous hemopneumothorax is the same as that of spontaneous pneumothorax. The hemothorax is considered to be merely a complication of a spontaneous pneumothorax which develops when a subpleural bleb, usually apical, ruptures. If vascular pleural adhesions are present, these may be torn as collapse of the lung occurs and bleeding from the torn adhesions results.

Rupture of a pulmonary arteriovenous aneurysm may cause massive hemothorax^{2,16} but associated pneumothorax has not been found with this entity.²

Intrapleural bleeding may result from a malignant process; however, as in pulmonary arteriovenous fistulae, pneumothorax is not an accompanying feature.⁴

Hemopneumothorax in tuberculosis is seen only when the disease is both obvious and

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advanced, however, hemothorax has been reported as a complication in collapse therapy.¹ Bleeding, as in spontaneous cases, presumably arises from adhesions being torn by the artificial collapse of the lung.

Although one instance occurring in a hemophilic has been reported, hemorrhagic diathesis is not regarded as a contributing factor.⁵

Clinical Features

The clinical picture may vary considerably depending upon the rate of collapse of the lung, the elasticity and time of tearing of the adhesions, and the rate of bleeding.

Classically, the first symptom is that of sudden chest pain on the involved side which heralds the onset of the pneumothorax. The pain may be relieved after a short interval or persist from several hours to several days when weakness, dyspnea, and shock ensue as a result of associated bleeding.⁶

At times, the onset may be insidious with weakness from blood loss as the only symptom.

The presence of chest pain, particularly when associated with shock, may give an erroneous impression of myocardial infarction.⁷

In a fair number of cases, presumably due to diaphragmatic irritation and referred pain, the clinical picture is that of an acute surgical abdomen. Laparotomy has been performed on at least two patients presenting with this type picture.^{8,12}

Examination of the chest reveals absent or decreased breath sounds, hyper-resonance superiorly, and dullness inferiorly on the involved side. Evidence of mediastinal shift is often present. Splinting of the abdominal musculature may be noted if there is diaphragmatic involvement.

X-ray of the chest shows lung collapse and a hydrothorax. Thoracentesis allows positive identification of the fluid.⁹

Treatment

Until the past two decades, the classical treatment for spontaneous hemopneumothorax was rest, sedation, oxygen, intermittent thoracentesis, and transfusion.^{8,9} With this treatment there was an associated mortality of 25 per cent and an equal number of respiratory cripples from fibrothorax and chronic empyema.⁹

Newer concepts developed during and since World War II have led to a more vigorous and helpful approach in the management of patients with pneumothorax and hemopneumothorax.

Thoracotomy for uncontrolled bleeding was suggested by Hartzell⁴ in 1942. Waring,¹⁰ in 1945, advocated thoracotomy for life threatening hemorrhage and decortication for the later complication of "constrictive visceral pleuritis". However, decortication for this particular entity was not carried out until 1947,¹¹ and emergency thoracotomy for uncontrolled bleeding not done until 1949.¹² During the past decade, several reports concerning the latter have been published.^{9, 13, 14}

In 1951, Hughes, et al,¹⁵ described the ease and safety of intercostal tube thoracotomy for management of pneumothorax. Others^{2,13,14} have since applied this principle in the management of hemopneumothorax.

Principles of treatment of individual cases will naturally depend upon the nature and severity of the clinical manifestations.

In the acute phase, treatment should be aimed at combating shock and infection, removal of intrapleural fluid, re-expansion of the lung, and control of bleeding.²

If simple needle aspiration is inadequate in removing the intrapleural fluid and in re-expanding the lung, closed thoracotomy with insertion of one or more intercostal catheters is recommended. When these measures fail, as evidenced by signs of continued bleeding or persistent collapse of the lung, open thoracotomy for control of bleeding, removal of blood clots and fibrin, resection of the

diseased tissue, and re-expansion of the lung should be urgently carried out.

After the acute phase, thoracotomy may be required for evacuation of fibrin deposits and lung re-expansion to prevent crippling fibrothorax.

Case Reports

Case 1. LNH Case No. 309501. A 42-year old white male was admitted to the medical service November 1, 1958, with a seven day history of left chest pain, pleuritic in type, with radiation down the left arm. Findings on admission revealed BP 110/72, P-74, R-22, T-99.2. Scattered wheezes were noted at the lung bases. The quality of the breath sounds was described as poor because of shallow respirations. The Hgb. was 13.2 gms. and WBC 12,150.

The admitting diagnosis was myocardial infarction and pleurodynia. However, an electrocardiogram made after admission was within normal limits.

Forty hours after admission, the patient complained of increased chest pain. At this time the BP was 90/76 and pulse 120/min. The hemoglobin, at this time, was 10.7 gms. Three hours later, the BP had dropped to 80/50 and the hemoglobin was 8.9 gms. Shock measures were taken with adequate response. Portable chest X-ray revealed extensive hydropneumothorax. Thoracentesis was done and blood obtained.

Thoracic surgery consultation was obtained and a diagnosis of spontaneous hemorrhage due to a torn adhesion was made. Twice daily thoracentesis with removal of 500 cc. increments of blood was advised. X-ray following removal of 1,000 cc. of blood revealed a 75 per cent pneumothorax with fluid levels present.

By November 6, 1958, 2,200 cc. of blood and 500 cc. air had been removed with repeated thoracentesis. X-ray at this time revealed no reduction of air or fluid. On this date, a No. 12 French catheter was inserted into the second left intercostal space and connected

to an underseal water trap to which gentle negative pressure was applied. An additional 250 cc. of bloody fluid and considerable air was removed; however, follow-up films showed persistence of the air and fluid collection.

Left thoracotomy was carried out November 10, 1958. The collapsed left lung was encased with fibrin deposits, and apical blebs were found. No active bleeding was present.

Decortication of the lung and resection of the blebs was carried out. The pleura was roughened to promote symphysis, and the pleural cavity drained with two intercostal catheters which were removed 48 hours postoperatively.

Recovery was without incident. X-rays made up to three years postoperatively show nothing of significance.

Tissue study of the resected blebs revealed only extravasated blood and mild chronic inflammation.

Case 2. LNH Case No. 319943. A 34-year old white male was admitted to the medical service on October 10, 1959, with a six hour history of left chest pain and exertional dyspnea. Physical findings on admission revealed a BP of 110/70, P-78, R-20. Decreased breath sounds and increased resonance were noted over the left chest. X-ray revealed a 50 per cent left pneumothorax. Bed rest and sedation were prescribed. Twelve hours after admission the patient complained of left chest pain and nausea. Pulse rate at this time was recorded at 78/min. and respirations at 30/min. Fourteen hours after admission the pulse rate had increased to 140/min. and the blood pressure was 60/0. Tracheal shift to the left was noted. The patient complained of weakness, chest pain, and dyspnea. Surgical consultation was obtained and a No. 12 French catheter was inserted into the second left intercostal space, anteriorly, and connected to an underseal water trap. Gentle negative pressure was applied to the water trap outlet via an Emerson pump. 1,200 cc. of blood and considerable air was evacuated rapidly. Shock measures were taken with

intravenous saline followed by whole cross matched blood. Immediate improvement was noted.

1500 cc. of whole blood was given over a 12 hour period. At this time, some diminution of breath sounds on the left, associated with dullness to percussion inferiorly, was noted. A portable X-ray revealed persistence of the pneumothorax and a moderate amount of pleural fluid. A No. 20 Foley catheter was then inserted into the seventh left intercostal space, posterolaterally, and connected via an underseal water trap to the Emerson pump for gentle negative pressure. This resulted in complete evacuation of the blood, and lung re-expansion; however, on October 13, 1963, a portable X-ray showed the lung had re-collapsed to a 75 per cent pneumothorax. With manipulation of the intercostal catheters re-expansion occurred. The catheters were removed 48 hours following this incident. Follow up chest X-rays made up to three and one-half years later have shown nothing significant.

Case 3. LNH Case No. 351561. A 38-year old white male was admitted August 28, 1962, with a 12 hour history of chest pain and shortness of breath, abrupt in onset. X-ray findings were those of a 90 per cent pneumothorax on the right.

A No. 12 French catheter was inserted into the second right intercostal space and connected to an underseal water trap. After a short period of observation when the air leak was noted to persist, an Emerson pump with negative pressure, (15 cm. H₂O) was connected to the out flow of the water trap. There was immediate improvement of pulmonary exchange and diminution of the dyspnea. X-ray on August 29, 1962, revealed almost complete re-expansion of the involved lung; however, the air leak persisted and on August 31, 1962, the negative pressure was discontinued as a trial effort to allow sealing of the leak. The patient's dyspnea increased and X-ray of the chest revealed an 80 per cent pneumothorax. Negative pressure via the Emerson pump was resumed; but the chest catheter no longer showed any significant discharge of air. Over the next two and

one-half hours, the patient's dyspnea increased and the pulse rate rose to 150/min. Portable X-ray of the chest was again done. While processing of the film was being carried out, signs of increased tension and mediastinal shift became apparent, and the BP dropped to shock levels. An additional No. 12 French catheter was urgently inserted into the third intercostal space anteriorly. 800 cc. of blood and considerable air was rapidly removed. Concomitantly, shock measures with whole blood transfusion was started. Immediate improvement was noted. The blood pressure returned to normal, the pulse dropped to 110/min. and the dyspnea abated. At this time, the previously made X-ray was reviewed and a 75 per cent pneumothorax and considerable pleural fluid was noted. Some four hours later, after two units of blood, the pulse rate had increased to 144/min. and X-ray revealed an increase in the pleural fluid. With this evidence of further bleeding a right thoracotomy was done. Some 1500 cc. of blood and clots were removed from the pleural cavity. Apical blebs were present, and a small linear tear was noted in one of the blebs. Active bleeding was noted from both stumps of a torn adhesion in the superior sulcus and on the blebs. The bleeding site on the parietal pleura was controlled with electrocoagulation and the blebs excised. Roughening of the pleura was done to promote symphysis, and the pleural cavity was drained with two intercostal catheters. These were removed after 48 hours and the patient went on to an uneventful recovery.

Tissue examination of the resected blebs showed fibrosis and emphysematous areas with a large number of thin wall blood vessels scattered throughout.

Summary

Three cases of spontaneous hemopneumothorax which illustrate points in diagnosis and treatment are reported.

A brief review of historical data, etiology,

clinical findings, and suggested modes of treatment is given.

Thoracotomy is recommended if needle aspiration and closed catheter drainage fail to remove intrapleural blood and re-expand the lung or if uncontrolled bleeding persists.

I am indebted to Dr. Charles Donald who was the consultant thoracic surgeon for the cases reported.

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MUCOCELE OF THE APPENDIX

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Mucocele of the appendix is relatively uncommon and may cause difficulty in diagnosis and treatment. Its pathogenesis and relationship to pseudomyxoma peritonei are discussed. A report of five cases of mucocele and one case of pseudomyxoma peritonei is presented from the Veterans Administration Hospital, Atlanta, Georgia.

INCIDENCE

The reported incidence of mucocele of the appendix varies from 0.03 per cent to 0.2 per cent found at autopsy and from 0.1 per cent and 0.2 per cent of appendices removed at operation.^{1,2,3,4}

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HISTORY

A cystic dilatation of the appendix was first described by Rokitansky in 1842,⁵ and was mentioned again by Virchow⁶ in 1863. The name "mucocele" was given by Feré⁷ in 1877. Werthe⁸ first described gelatinous material in the peritoneal cavity in 1884. Frankel⁹ first reported pseudomyxoma peritonei in a male patient due to a ruptured cyst of the appendix found at autopsy. In 1909 Kelly¹⁰ found 28 cases of mucocele in the literature and added another 44 cases.

PATHOGENESIS

Cystic dilatation of the appendix secondary to proximal occlusion of the lumen is a widely accepted theory concerning pathogenesis. In experimental work, done primarily in the rabbit, three factors have been found necessary for the development of a mucocele: 1)

obstruction of the appendiceal lumen, 2) sterility of its contents, and 3) continued secretory activity of the mucosa.¹¹

Hilsabeck¹² and others in reviewing 258 cases over a 40 year period from the Mayo Clinic have reported the following causes of appendiceal obstruction as etiological factors in the production of mucocele: 1) infection from coliform organisms, 2) fecal concretions, 3) natural diverticula of the appendix, 4) cecal neoplasms, 5) carcinoid of the appendix, 6) multiple polyposis with blockage of the appendiceal orifice into the cecum, and 7) implants of endometriosis with stricture.

RELATIONSHIP TO PSEUDOMYXOMA PERITONEI

Olshausen¹³ proposed the commonly accepted pathogenesis of pseudomyxoma peritonei in 1884. He believed that upon rupture of a mucocele some of the mucous cells are implanted and give rise to cysts. These, as well as the original mucocele, are the sources of a massive seeding of the peritoneum with myriads of cysts.

The nature of pseudomyxoma peritonei remains controversial. Even the name is questioned since the gelatinous material is considered to be mucin rather than pseudomucin.

Woodruff and McDonald¹⁴ in 1940 divided mucocèles into non-malignant types and Grade 1 adenocarcinoma of the appendix in an attempt to account for the fact that some mucocèles lead to pseudomyxoma peritonei and others do not.

They reported 146 cases from the Mayo Clinic of which 136 were classified as simple mucocele and ten as adenocarcinoma, Grade 1. The ten cases of intracystic carcinomas were found in approximately 43,000 surgically removed appendices.

The distinguishing characteristics of adenocarcinoma, Grade 1, are stated to be a papillary arrangement of mucous membrane and a comparative hypertrophy of cells and nuclei which are hyperchromic and eccentric. Wood-

ruff and McDonald suggest that adenocarcinoma is the result of a malignant change taking place somewhere in the pathogenic cycle of the simple mucocele and that this, in turn, is due to an obstructive process in the appendiceal lumen. Whether considered malignant or benign, pseudomyxoma peritonei may prove to be fatal.

DIAGNOSIS

Most cases of mucocele are said to occur after the fourth decade. Norment¹⁵ found the average age to be 41 with an age range of from four to 65. Woodruff and McDonald reported an average age of 42.3 years with a range of four to 70 years, with a higher frequency in the fourth, fifth and sixth decades of life. The sex ratio is inconstant. It varies from a male-female ratio of 2:1 to 1:4.^{14,15,16}

Symptoms are not diagnostic. They vary from an asymptomatic lesion (found only at autopsy) to the symptoms of acute appendicitis. Some patients have chronic abdominal pain over a period of weeks or years. Rupture of a mucocele may simulate symptoms of a perforated peptic ulcer.⁴

Euphrat¹⁷ gives the following criteria for the accurate radiological diagnosis of mucocele:

a) A sharply circumscribed, globular or veriform soft-tissue mass, with considerable mobility, but firmly attached to the cecum,

b) Medial displacement of the cecum by this mass,

c) Calcium deposits in the wall or substance of the mass, failure of the appendix to fill with contrast agent, and a vertical appearance of the folds of cecal mucosa support, but are not essential to the diagnosis.

The diagnosis of pseudomyxoma peritonei, like that of mucocele, is difficult and rarely made preoperatively. There may be indefinite abdominal masses which slowly develop and which are associated with recurrent attacks of abdominal pain.

TREATMENT

Care must be taken to prevent the rupture of mucocoele contents into the peritoneal cavity upon excision of the mucocoele to prevent the potential hazards of pseudomyxoma peritonei. An appendectomy is satisfactory treatment for most cases of mucocoele (Table 1, Cases 2, 3, 4). When it is impossible to determine grossly or by biopsy the nature of the cecal lesion, a right hemicolectomy is recommended along with removal of the terminal ileum. Leakage of contents of a mucocoele can elicit a marked desmoplastic reaction surrounding it and cause the cecum or terminal ileum or both to become imbedded in a hard mass. To dissect the mass from the cecum and terminal ileum along with the appendix is not only almost impossible, but hazardous. A right hemicolectomy and ileotransverse colostomy becomes the safer procedure (Table 1, Case 1).

It would seem wise to remove the appendix in the face of widespread pseudomyxoma peritonei as further progression of the disease might be halted. Experimental studies also suggest that regression of peritoneal implants may occur when further seeding is prevented by appendectomy, but this is not established.

COMMENT

Five cases of mucocoele of the appendix and one case of pseudomyxoma peritonei were found in a review of 1,460 surgical appendiceal specimens and 2,524 autopsy appendiceal specimens at the Veterans Administration Hospital, Atlanta, Georgia. This is an incidence of 0.15 per cent. In none of these cases was the correct diagnosis made preoperatively.

The six cases are presented in Table 1, which includes age, race, sex, a brief clinical note, pathological findings, and follow-up data. Three of the patients had intermittent symptoms for weeks or a month and the other had symptoms of acute appendicitis. Two of the six patients had a palpable abdominal mass preoperatively. A third patient had a

large retroperitoneal mass which was discovered after the abdomen was opened.

X-ray findings: In Case 2 an extrinsic mass impinged on the medial aspect of the cecum and the appendix was not seen on barium enema. However, the cecal folds were normal and the lesion could not be diagnosed by the criteria of Euphrat. In Case 4 there was depression of the hepatic flexure of the colon by an extrinsic mass. Four of the patients had intravenous pyelograms, none of which aided in diagnosis.

Case 1 was treated by right colectomy and terminal ileectomy due to the difficulty in diagnosis. The three others were treated by appendectomy. The patient with pseudomyxoma peritonei had exploration and biopsy only. The initial diagnosis of abdominal carcinomatosis, primary unknown, was made. At autopsy 22 months later, the patient was found to have pseudomyxoma peritonei. Inanition was the cause of death.

It should be emphasized that the desmoplastic response surrounding a ruptured mucocoele makes differentiation from malignancy very difficult and treatment either impossible or unduly hazardous without a partial right hemicolectomy and ileotransverse colostomy.

CONCLUSIONS

1. The incidence of mucocoele of the appendix in autopsy and surgical specimens varies from 0.03 per cent to 0.2 per cent. The incidence is 0.15 per cent at this hospital.
2. A correct preoperative diagnosis of mucocoele is seldom made.
3. Appendectomy is satisfactory for the treatment of most mucocoeles.
4. A desmoplastic mass resulting from a ruptured mucocoele may make the diagnosis difficult. A right hemicolectomy and ileotransverse colostomy is the safest management.
5. A review of this subject would suggest that the wisest course to follow in cases with pseudomyxoma peritonei is appendectomy.

MUCOCELE OF THE APPENDIX

TABLE I

Case Age Race Sex	Clinical Note	Pathology	Follow-Up
1. 45 W M	Admitted with 3 week history of RLQ and rt flank pain, chills, fever and sweating. T. 101.2, P. 120. There was RLQ and rt flank tenderness and rt flank dullness. No mass palpable, psoas sign markedly positive, pre-op WBC 19,300. Operation: Exploratory celiotomy. Rt colectomy and ileotransverse colostomy.	Oper. Findings: 8x15 cm retrocecal mass, firm and rubbery in consistency and densely attached to femoral nerve, iliacus muscle and cecum. No cystic areas seen. Path. Dg: Frozen section, "malignant tumor, possible Schwannoma". Permanent sections, ruptured mucocele of appendix with marked surrounding desmoplastic reaction.	4 months. Symptom-free.
2. 68 W M	Sudden onset RLQ pain, tenderness. Appendectomy recommended by the local physician and refused. Pt. followed for next 6 weeks with mass in RLQ which at first reached up to level of umbilicus, but gradually decreased in size to about 2 x 1 cm. WBC 4,125. Operation: Expl. celiotomy and appendectomy.	Oper. Findings: Chronically inflamed appendix with numerous small cystic structures containing mucoid material in mesoappendix. Path. Dg.: Subsiding appendicitis, periappendicitis and mucocele.	4½ years P. O. without any symptoms.
3. 25 W M	2-day history of cramping periumbilical pain, nausea, vomiting. 3 mo. prior to this, and 1 mo. prior to admission he had experienced brief similar episodes. T. 98.6, P. 76. Pt acutely ill, abdominal distention, tympany, generalized rebound tenderness. No palpable mass. Operation: Appendectomy.	Oper. Findings: Large fusiform appendix covered with shaggy exudate and surrounded by periappendiceal abscess. On section. multilobulated spaces containing mucin. Path. Dg.: Mucocele appendix with acute appendicitis.	2 wks P. O., intestinal obstruction. Required laparotomy, lysis adhesion. Lost to follow-up after this.
4. 30 W M	Periumbilical discomfort, few hrs duration, gradually localizing RLQ. History of two similar episodes during 2 mo. prior to admission. T. 97.6, P. 76. There was guarding, RLQ tenderness and rebound tenderness. Rectal exam revealed tenderness on rt. WBC 16,300. Operation: Expl. celiotomy and appendectomy.	Oper. Findings: Edematous grey-white appendix containing gelatinous material on section. Path. Dg: Postinflammatory fibrosis and mucocele, appendix.	Lost to follow-up.
5. 68 W M	Died of extensive bronchogenic carcinoma. An autopsy was performed and the appendix examined routinely.	Path. Dg: Mucocele, confined to appendix.	
6. 63 W M	Pt. admitted with 4 mo. history of abdominal enlargement and discomfort, dyspepsia. There was a 15 x 18 cm irregular RUQ mass which was tender and movable. Operation: Expl. celiotomy and biopsy only.	Oper. Findings: Carcinomatosis. No primary site identified. Path. Dg: Extremely well differentiated adenocarcinoma of mucous-producing variety. Primary site undetermined.	Pt. survived 22 mo. At autopsy implants were confined to serosal surfaces. Primary site appendix. There were no metastases outside peritoneum. Pt died of inanition.

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SMALLPOX TODAY

Smallpox is increasing in most areas of the world, the Public Health Service said today.

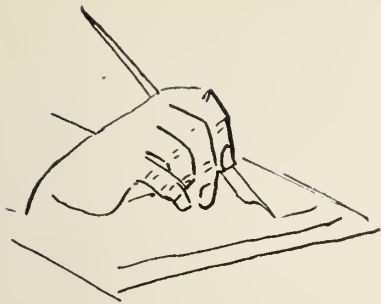
According to preliminary figures for the first eight months of this year, 39 countries have reported 51,639 smallpox cases, compared with 44,870 cases in 46 countries for the same period in 1962.

The largest numbers of cases have been reported in India, 31,184; Pakistan, 4,314; the Republic of the Congo, 4,308; and Indonesia, 3,397.

At present North America and Australia are the only continents free of smallpox.

Persons planning trips abroad should make sure they have been successfully vaccinated at least within the past three years. Travelers to smallpox-infected areas should have been vaccinated within the past six months.

Information on infected local areas is available from the Division of Foreign Quarantine, Public Health Service, Washington 25, D. C., and from U. S. Quarantine Stations.



Editorials

Guest Editorial....

Dr. Ennion S. Williams

Vice-President and Medical Director of
the Life Insurance Company of Virginia

The objective of the Health Insurance Industry is to assist the public in financing health care in a manner that will justify continuation of a voluntary free enterprise method. It believes that the public will be better served through a voluntary method of providing and financing medical care than through a compulsory system. It believes that it has an opportunity to work with the medical profession and hospitals in a mutual endeavor to keep both the providing and financing of medical care free of government control.

Last year the insurance industry paid \$3,-762,000,000 in health care benefits. This was payable under 5 different categories; namely, hospital, surgical, medical, major medical, and loss of time policies.

Why is the insurance industry in a position to make a contribution?

In the group field medical expense coverage is a logical component of a package which

also includes life, disability, and retirement pension benefits.

In the individual field, health insurance is another item in the portfolio of over 100,000 members of the American agency force.

The insurance industry has been able to experiment in new methods because of the flexibility of its operation and is under pressure to do so because of competition.

The traditional forms of insurance provided benefits for hospital room and board, hospital miscellaneous extra charges and a surgical allowance according to a schedule.

Certain problems arose with these earlier forms of insurance from the viewpoint of the physician. There were pressures for hospital admissions because care outside of the hospital was not covered. The emphasis was on moderate expense—not on the unusual and really burdensome expense. There was the irritation caused by a fee schedule with the

implication that the insurance company was setting the fees. There was the failure to recognize medical as contrasted with surgical care.

To correct these shortcomings, the concept of major medical and comprehensive insurance came into being. Benefits are paid under these policies regardless of where service is rendered. There are high overall limits. There are no fee schedules, but benefits are paid on the basis of "usual and customary charges." Charges for medical service have the same status as surgical charges. The major medical and comprehensive policies do have a "deductible" amount and pay 75 to 80 per cent of eligible expenses over the deductible. It is the opinion of advocates of these types of insurance that the contribution made by the insuring mechanism is greater in covering expense over a deductible than in covering the first \$50 to \$100 of expense.

These answers are not final solutions and are not universally accepted as being wholly desirable. There are still those who prefer "first dollar" coverage, and there is the threat that the lack of schedules will have an inflationary effect on the total cost of medical care. The acceptance is encouraging, however, as major medical is the fastest-growing type of health insurance. The industry is indebted to the medical profession for its cooperation. In many states insurance review committees have been organized and insurance companies can seek advice in the spirit of inquiry rather than in the spirit of complaint. This has been very helpful. Another development has been the formation and functioning of hospital utilization committees composed of medical staff representatives. These committees have a more difficult and complex job than review committees. Their formation in some localities demonstrates the interest of the medical profession in fostering the most effective and efficient use of the medical care dollar.

Besides experimentation in policy design, I would like to mention one other endeavor to make health insurance more effective. This is the formation of the Health Insurance

Council. It was created shortly after World War II and is supported by eight insurance trade and professional organizations with the purpose of working with the providers of health services. Among its activities have been:

The Annual Survey measuring the growth and extent of health care plans.

The simplification and standardization of claim forms.

Hospital admission plans for establishing credit based on insurance at time of hospital admission.

Joint studies of certain technical aspects of health insurance, and

The formation of committees in each state to meet with Insurance Committees of state and local hospital and medical associations.

Last month four regional meetings were held in your state between representatives of hospitals and the insurance industry. I am intrigued by the frankness of the titles of the two main addresses at each meeting. Each reads—"What we like and don't like about you." One by a hospital administrator and the other by an insurance representative.

Surely this indicates a willingness to have a meeting of minds. The Health Insurance Council is equally willing to listen to what the medical profession likes and does not like about Health Insurance.

There are many other facets of health insurance that challenge the industry and concerning which the industry would like your advice and help. Among these are the problem of over-insurance and duplication of benefits, the need for expanding psychiatric benefits, the challenge to cover nursing home care, dental care, and more persons over age 65. With regard to this last item, I would like to mention the fact that last year 80 per cent of the new group insurance plans written made provisions for continuing coverage past retirement.

THE MISINFORMED

Some years ago there was much notoriety given a new drug in the realm of the treatment of cancer. Some dedicated people had their reputations endangered if not markedly altered. Others profited. Medical Institutions came under attack. The American Medical Association was criticized for "withholding a new hope for cancer victims." There were law suits, charges and counter-charges. Now the end of this episode seems in sight. But whether we like to face it or not, all reputable physicians were affected and the battle for the establishment of final truth and justice rests in part upon each of us. The fact that "Krebiozen" has finally been put in its proper place is not the entire story.

As the carefully placed feathers of gossip were scattered to the four winds, so will the memory linger in the minds of many that the doctors "persecuted someone" and "withheld help" from the victims of cancer. These minds may not even remember the name "Krebiozen" and they may never learn of its true identity. They will always know only a half truth.

During the height of the "Krebiozen" controversy a patient-friend took us to task on the issue. This college graduate who is well read and a "civic leader" was indignant that "the AMA and you doctors" had refused to push that "wonderful new cancer cure, 'Krebiozen'." Had not "those scientists, some of the biggest names in the country," offered it?

Our position seemed strong but our argument, which had been turned into a defense by an unexpected attack, seemed weak. Explanations became involved. We likely lost the battle by not achieving a clear victory. We resolved, however, to sharpen our ability to debate such matters, and to begin a crusade

for the enlightenment of the public concerning the careful, humble, scientific safeguards employed by organized medicine for its protection.

Federal investigators and independent researchers have separately identified the product known as "Krebiozen" as nothing more than creatine. The announcement was made by the U. S. Department of Health, Education, and Welfare in a report entitled "Results of Analysis of 'Krebiozen'." Infra-red spectrograms made from a small supply of the drug were re-examined and compared with that obtained by using a sample of creatine hydrate. Next, extensive work was done on creatine by infra-red spectrophotometry, by X-ray, by microscopic study and by mass spectrography. Finally, a vial of "Krebiozen" was opened and its contents independently examined by the Division of Microbiology, FDA; the University of New Mexico; the Department of Interior; the University of Texas; the Division of Food, FDA; the Massachusetts Institute of Technology; and others. There was complete agreement that the substance labeled "Krebiozen" is creatine.

The human body will produce in 24 hours as much as 100,000 times the amount of creatine as the alleged content of "Krebiozen" in one ampule. Further, the chemical has been used in the past by the National Cancer Institute in chemotherapy attack against animal tumors. It was found ineffective even in very high doses.

What a pity that the actions of a few could cause so much trouble for so many. If only we all lived by a same high code of ethics.

This, we predict, is not the end of this story. This story never ends. A new chapter is already being written somewhere, somehow, by either the greedy or the misinformed.

TETANUS—AN OLD PROBLEM THREATENS A NEW DILEMMA

Of all the poisons known to man, medicine is perhaps most concerned with that produced by tiny bacteria that go by the big name *Clostridium tetani*.

For it is this poison, a sort of by-product of the growth of the microscopic blob of life, that causes the ravages of tetanus—commonly called lockjaw.

Modern medicine has greatly reduced the prevalence of tetanus. In fact, its uncommonness has caused such public lack of concern that the national level of immunity has decreased in recent years. This in turn has increased the danger that the disease will start a comeback.

To reverse this ironical situation, the American Medical Association recently began a continuing campaign of public and professional education aimed at getting the nation's protection against tetanus on a firmer footing.

Tetanus remains one of the most dangerous diseases that can strike a human being. No antibiotic or other drug can halt a full-blown case of the disease, and about 60 per cent of those afflicted die, according to Raymond L. White, M. D., Director of Environmental Medicine for the AMA.

Tetanus never has been a mass killer as pneumonia and tuberculosis once were, he explains. But it does cause a particularly frightening form of death among the majority of those it strikes.

"The fact is," Dr. White said, "practically no one needs to die of tetanus . . . or acquire the disease, for that matter. Yet each year we still receive reports of 400 or so cases."

How is it then that tetanus is not a more common disease?

For one thing, physicians are trained and retrained to take special precautions. Almost every time he sees a wound—major portal of entry for the disease—the specter of tetanus arises in a doctor's mind.

For another, tetanus is a finicky disease. Circumstances must be exactly right for it to strike.

The drumstick-shaped micro-organism that causes tetanus is physically rather feeble. A breath of fresh air will kill it—a fact which has led some physicians to place tetanus victims in pressure chambers where more oxygen than normal can be forced into body tissues.

The bacteria grows well, however, in the air-free intestinal tract of animals, including man. Within the intestines the bacteria offer no outright threat to the host. The danger lies in the spores or seeds produced by these bacteria which reach the ground in animal manure.

In contrast to their parents, the spores are extremely tough. They are not affected by air and are even transported great distances by the wind. They can endure an hour in boiling water or germinate after sitting in wait for a victim for as long as eleven years—provided conditions are to their liking.

In order to begin their chain of infection, tetanus spores must be injected into the living tissue of the body. This can be accomplished by a cut, scrape, scratch or even something as minute as an insect sting—things people usually don't see a physician about.

Usually the spore is flushed out of a free-bleeding wound. But when there is little bleeding, as in puncture or crushing wounds, or when dirt or dead tissue within a wound

keeps blood away from tetanus spores, then the seeds may hatch into the tetanus bacteria, which grow and liberate their poison.

There are two agents in this poison, both of which are probably necessary if the bacteria are to begin their destructive infection. One, tetanolyisin, has the ability to break down red blood cells, thus insulating the bacteria and allowing them to multiply.

Tetanospasmin, the other chemical in the poison, attacks the nerve centers causing convulsions and muscular spasms—some so severe that victims have been known to fracture their own vertebrae. Tetanospasmin is of such potency that a thin coating on a pin point would be enough to cause several deaths.

Usually the first nerves to show evidence that tetanus toxin is at work are those of the head and neck, and particularly the chewing muscles. These turn rigid through spasm and give the disease its familiar name.

Once the toxin has entered the nervous system, tetanus is largely out of reach of medicine. So, it becomes the physician's task to prevent the toxin from ever getting that far.

Medicine has two weapons to guard against tetanus. One, an anti-toxin, is capable of neutralizing the deadly by-products of the tetanus bacteria once they have sprung to life within the body. The other, tetanus toxoid, works something like a vaccine, stimulating the body into defending itself against tetanus.

The anti-toxin was discovered first and was used extensively during World War I. It saved many thousands of lives, for the long-cultivated and heavily manured fields of Flanders were found to have a particularly heavy concentration of tetanus spores.

The anti-toxin, however, has one serious drawback. Animal serum is used in its manufacture, and some people are literally deadly allergic to animal serum. Therefore, anti-toxin is employed only as an emergency measure and only after a person's sensitivity to serum has been determined.

Far more preferable is tetanus toxoid. It rarely produces dangerous side effects and, when injected like a vaccine, has protection already established should tetanus spores subsequently enter the body.

"Despite the almost complete protection against tetanus offered by immunization, the disease remains a ticklish proposition in this country because millions of people have allowed their immunity to wane, and millions more have never been immunized," Dr. White said.

"Most people don't seem to realize that one shot of tetanus toxoid, or even a single series of shots, won't confer life-long immunity. Complete protection demands recurrent immunization."

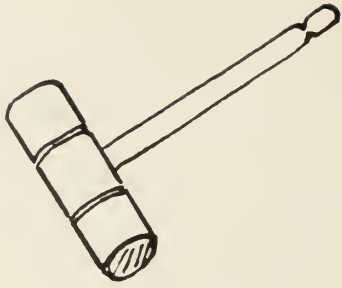
The need for continued protection is demonstrated by the ability of tetanus to sort of "out-wait" the body defenses. Spores have been known to lie dormant in the scar tissue of an old wound, or in bits of dead bone resulting from a complicated fracture, until a subsequent injury set them free to spring into virulence.

Injury, even without external wounding, can also trigger the growth of tetanus bacteria in internal organs where spores can be carried by the blood stream from the site of a wound.

"In the nation today, tetanus mortality is highest in young children. This can only be true because so many parents fail to take advantage of tetanus immunization for their infants," Dr. White said.

While perhaps less open to infection, the adult population is so "extremely nonchalant" about tetanus that "an estimated three-fourths are lacking in immunity," according to Dr. White.

"This," he adds, "is sheer neglect. With the new emphasis on outdoor living, with accidents on the increase and with the spore of tetanus in the dust and dirt all about us, we can only look forward to an increase in this deadly disease unless we make better use of our good sense, get immunized and keep immunized."



President's Page



After doing general practice in rural areas for four decades, one has accumulated many experiences of substantial significance and value to himself, as well as to those for whom he has rendered this period of service.

One learned early that no doctor could go it alone. He must rely often on others who were more adequately and specifically trained than himself. Because of this recognized fact, one has always tried to cultivate contacts who could and would assist him when he had exhausted his capacities in any case. By this habit, one has learned to know, respect, and appreciate that category of doctors known as specialists without whose assistance some of my patients would have suffered unnecessarily. One shall always be indebted to these friends who have so willingly, freely, and often-times gratuitously come to my rescue when needed.

Especially does one want to express his feelings concerning those doctors of medicine who were specialists in the field of public health. They have been concerned and co-operative enough to add materially to the scope of my private practice. They have been the source of life saving preventions to thousands of people in the communities where one has labored. They had the ability and willingness as consultants to advise me about many patients suffering with diseases whose identity had to be reported and whose spread had to be prevented.

They have done much in accomplishing the high standards of health that now obtain in every county in Alabama.

All these services have cost the tax payers very little when compared to the values received. One rarely ever stops to properly evaluate their services. At times, some of us,

laymen as well as doctors, unnecessarily complain about why and what the public health physician is doing for society.

During the very short time of my little practice, I have heard these men actually degraded to an impossible point, merely because when they were striving to prevent diseases and save lives they were accused of stealing someone's patients. Not only that, but they have been called do-gooders and socialists who through their public health procedures were leading the private practice of medicine into the hands of the government. (How unkind can we be?)

All these criticisms are unjust and false, for these medical doctors in public health have all the attributes of personality and dedicated loyalties as those of us doing private practice. Theirs is a service that the demands of the times had to have in order to make progress in any direction. For instance, the Panama Canal could not be finished until Dr. Gorgas deleted the health hazards. The seaport towns could not survive until public health doctors eliminated Yellow Fever, Malaria and other pests which stopped progress in its tracks. These are the men who have given themselves freely for better health in Alabama. These are the men who have kept alive and perpetuated in a very practical, efficient and unselfish way that "Incomparable Alabama Plan" of public health in our state.

True, they have received very little attention in a complimentary way, but due to their humble attitudes and dedicated loyalties, they went on doing a duty that could have been done no other way and by no other

group. The fruits of their efforts are conclusive proof of the significance of their specialty.

The fact that they are public servants and not servants of the public does not subtract from their professional stature at all. They are one of the agents through which the doctor-patient true relationships are maintained and improved.

The time is now here when a re-evaluation and increased attention must be given to this phase of our entire medical organization known as the Public Health Committee of Alabama. We shall have to strengthen this arm of our set-up if we hope to successfully cope with the trends of political power seekers and adequately meet the changing demands of present day circumstances.

Every doctor who is a member of the Medical Association of the State of Alabama is also a member of the Committee of Public Health and therefore is responsible for whatever program this Public Health Committee undertakes.

These state and county public health physicians are the administrators of this committee's plans, and as such are just as important and necessary as specialists in private practice.

Shall we continue to be unlearned and unconcerned when we are so fortunate in having such influence over our public health system in Alabama today?

J. S. Daves, M.D.



SCENES FROM THE REGEN



MEDICAL PROGRESS ASSEMBLY

Project MORE

If there is not already a doctor shortage, there surely will be one unless the present trend is stopped. More top young minds must be recruited for medicine. This is exactly what the American Academy of General Practice expects to accomplish through Project MORE. Mac F. Cahal, Executive Director of the Academy, has stated: "This award-winning Academy public service/public relations program has been proved as a unique and outstanding plan for stimulating the interests of qualified high school youth in medicine as a career."

The Montgomery Chapter of the Academy has just finished its first Project MORE program. This was among the earlier applications of the plan in America. Mobile, however, successfully carried out its first Project MORE several months ago. This was one of the earliest trials of the program in the nation.

What Is Project MORE?

It is "career recruiting" for medicine generally and family medicine specifically. MORE stands for more physicians. MORE stands for more quality in the applicants to schools of medicine; more dedication to both the art and the science of medicine; and inevitably, more and better health care for the nation and the world.

How Does It Work?

The local chapter of the Academy speaks to the high school seniors in assembly. Interested students sign cards asking for participation in Project MORE. These boys and girls are then given two lectures called respectively *Ars Medica One* and *Ars Medica Two*. Shortly thereafter this *Ars Medica* group of interested students is taken on an extensive tour of a general hospital. Immediately thereafter, working with faculty advisors from the high schools, the group is selectively

reduced. Grades, aptitudes, interests, and personal evaluations are used by the school advisors to choose the finalists.

The chosen few enter the student preceptorship program. Each is assigned to a physician and spends a full working day with his or her preceptor. Every activity of the teacher-physician is viewed, at least in part, by the preceptee. This close contact is expected to be the most likely means to establish a desire of the well-qualified students to enter medicine. The preceptor and the preceptee are encouraged to continue their contacts as they apply to the study of medicine.

The final event is a banquet attended by the students and physicians. Here, there is a meeting in brotherhood and, it is hoped, mutual admiration. There is good food and a good speaker. Thereafter, there may be personal contacts and remembrances—but, next year the project is begun all over again.

Does It Work?

About 125 students from the leading high schools of Montgomery enrolled in the first Project MORE held in this community. Obviously, a lesser number of these can be expected to enter premedical training. A far smaller group can be expected to apply for entrance into medical school. Without Project MORE, some of these high school seniors will become physicians. With Project MORE, perhaps there will develop increased competition.

If only one bright and dedicated student out of the 125, who would otherwise have entered another field, becomes a practitioner of medicine in Alabama, the Montgomery 1963 Project MORE program will have been a success.

Does it work? This question cannot be answered this year or the next. Rest assured that statistical studies of Project MORE will continue. Be informed that Project MORE will expand, not only in Alabama, but throughout the nation.



MEDICAL CENTER NEWS

YEARLY REPORT—1962-63

I. History and Purpose

The Division of Continuing Medical Education of the Medical College of Alabama was established in October of 1962. Prior to this time, departments and individuals within the Medical Center co-operated with various health groups, upon request, in offering ways and means to aid and abet the practicing physician in continuing his medical education. Sporadically, courses were offered within departments within the medical college also. Dr. Roy Kracke, at the time of his death, was interested in this phase of medical education, and with Dean Morton, of the Extension Center, was exploring possibilities of enhancing this phase of education. No centralization, however, was accomplished until October of 1962, at which time Dean Hill requested Dr. Margaret Klapper, as one of the assistant deans, to direct and start a division of continuing medical education of the Medical College of Alabama. The University, as a center of learning, and with a responsibility for dissemination of knowledge, recognizes an obligation to the physician throughout his professional career. The ultimate purpose of this division is the same as the objective of all medical education, which is to improve the quality of medical care.

II. Financial Resources

Until the division is more fully established, it will have no specific financial allocation. The director, her secretary, and the business office handle the administrative aspects of the division. It is anticipated that registration fees will support those courses which are not co-sponsored by other health groups

or grants within individual departments. Projected plans for development anticipate that the division will eventually grow to department size with some full-time personnel and, as such, will justify a specific source or sources of income.

III. Organization

At the present time the director devotes approximately one-fourth to one-third of her time to activities of the division, and her secretary about the same. The division works closely with the Advisory Committee to the Medical College of Alabama of the Medical Association of the State of Alabama, and the Alabama Academy of General Practice. The program committee for the division consists of the director as chairman, a member of each of the major clinical departments of the Medical College, a member of the Advisory Committee to the Medical College of the Medical Association of the State of Alabama, and a member of the Educational Committee of the Alabama Academy of General Practice. The dean of the Medical College participates actively as an advisor to the division. A full-time secretary and a non-medical administrative assistant are immediately desirable and would allow for a more rapid growth and expansion of the division and its functions. The Medical Association of the State of Alabama has been and continues to be most co-operative and of invaluable assistance. In assuming the mechanical aspects of the bulk mailing for the division, it has been of tremendous help.

IV. Educational Program

All departments and allied health fields are invited to offer courses for consideration

by the Program Committee for presentation through the Division of Continuing Medical Education, provided such courses are directed toward the continuing education of the practicing physician. The division also acts as a consulting or co-ordinating body in scientific programs throughout the Medical Center in the allied health sciences. During 1962-63 four courses were offered through the Division of Continuing Medical Education. These were: *Radioisotopes*, through the Department of Medicine and V.A. Hospital; *Pediatric Neurology*, sponsored by the Department of Pediatrics; *Behavior Disorders and Other Emotional Problems in Children*, cosponsored by Children's Hospital and the Department of Psychiatry; and *A Short Course in Hypertension and Ischemic Heart Disease*, through the Department of Medicine and V.A. Hospital. The course in hypertension and ischemic heart disease was the first to be completely developed through the Division of Continuing Medical Education.

Projected plans include the development of an increasing number of short courses acceptable to the practicing physician. A questionnaire to all practicing physicians of Alabama indicated a major interest in intramural short courses of one or two days based upon single or closely related topics. The possibility of extramural seminars has been considered by the program committee, and information was disseminated that the division would consider invitations by local groups of physicians and work with them in the arrangement of extramural symposia or courses.

Five courses are presently being planned for the 1963-64 year, and indications are that the division will be asked to participate in an extramural seminar early in the fall.

As a means of evaluation of the effectiveness of the programs, members of the Advisory Board and from the Academy of General Practice will report as to the general acceptability of the programs. Specific programs sponsored by the division will be followed immediately by a letter to participants including questions pertaining to the evaluation of the material presented.

V. Library

A library service to include journals, tapes, tape recordings, and video tapes is not presently available through the division, although the general library of the Medical College of Alabama does offer services to the practicing physicians of the state. Development of a library function of this sort, or library materials of programmed instruction, through the Division of Continuing Medical Education is an intriguing challenge for the future, but is not yet under active consideration.

VI. Faculty

The individual accepting responsibility for a specific course will be responsible for the program for that course, calling upon the director of the division as necessary. It is up to the individual sponsor of each course to decide whether to use all Medical College faculty or part Medical College faculty and part invited faculty, or all invited faculty. At present, unless a co-sponsor or outside source of funds is available, there is no arrangement for bringing in outside faculty through the division. A responsibility for continuing medical education as part of the responsibilities of all the full-time faculty is recognized by the administration, and participants from the Medical College of Alabama receive no extra remuneration. As the number of courses grows and the activities of the division increase, it is anticipated that this will necessitate increasing the number of full-time faculty. Plans do not include having any members of the faculty as full-time members of a faculty for continuing medical education.

VII. Student Personnel

The Division of Continuing Medical Education is designed primarily for the continuing education of the practicing physicians of the State of Alabama. Other interested individuals and physicians from other states may be included or specifically invited, dependent upon the nature of the course and the number of registrants who can be ac-

commodated. The usual student-teacher relationship is not expected in the courses offered through the division. Here, it is more a dissemination of new knowledge and review of old knowledge, with an exchange of ideas and information between the practitioner and the preceptor. It is anticipated and desirable that these courses serve as continuing education to both, and that faculty and registrant are equally participant.

VIII. Physical Facilities

No specific physical facilities for instruction are required or anticipated being required for the functions of the division except to the extent that enough conference rooms, lecture halls, etc. exist within the medical school complex and become available for use by the division. Courses co-sponsored by other groups and with large numbers of

registrants may require the use of an auditorium outside the Medical Center. Office space for the division is immediately desirable and should be adequate to house the director, a non-medical administrative assistant, secretary, and the necessary equipment and supplies.

IX. Research

No specific research program is immediately anticipated within the division. It is envisioned, however, that information gained from the courses and functions of the division over a period of time may yield information useable as research in or toward education and continuing medical education.

Respectfully submitted,

Margaret S. Klapper, M.D., Director
Division of Continuing Medical
Education



NEW ENRICHMENT VENTURE FOR EXCEPTIONAL STUDENTS

The new enrichment venture for exceptional medical students, inaugurated last spring by the Medical Center's Growth and Development Institute, wound up its first session with the opening of the academic year. The program, under the direction of Dr. Kendrick Hare, is providing comprehensive education in growth and development for outstanding students who desire additional training along with their standard medical education.

Dr. Hare says this is probably the first such program actually to be put into effect at a medical institution. It is another manifestation of the drive to put the Medical Center among the top in this field, for education, training and research.

The Institute selected eleven students who displayed unusual ability in their undergraduate years to initiate the program. Their four years of Medical School will be supplemented by intensive periods of training during sum-

mers; when they become juniors and seniors, work in this field will be intensified along with regularly scheduled courses.

Each year, ten more students will be selected to participate in the program. To be eligible, they must have earned the baccalaureate degree and have expressed an interest in this field of study.

According to Dr. Hare, this type of program will be expanded to other fields and institutions. "There has been a great need for such an enrichment course," he says, "and we are very pleased to be able to offer our students such an opportunity. We cannot help but make better physicians of them, and at the same time we are stimulating their interest in academic medicine and research."

The Institute transcends departmental lines. Each training period features comprehensive work in a variety of subjects related to growth and development.

During the first phase of the program, which begins the summer preceding the freshman year, the students are in graduate school for three months each summer. At the end of this phase, they will be candidates for master's degrees. The second phase consists of a five-year period during which time the students alternate between work toward the M. D. and Ph. D. degrees. Graduate degrees are awarded by qualified basic science departments.

The program will be flexible, depending upon the student and his advisor, but will consist primarily of seminars, conferences and visiting lecturers who are specialists in the field.

One student expresses the profound effect of the enrichment courses upon his career and upon his personal understanding of his chosen profession: "... My association with the Institute of Growth and Development has revealed to me that there is much to be sought and solved in medicine. For the first time, I have begun to feel a true sense of responsibility. I found I could no longer depend solely on textbooks and lectures; I had to rely on my own thinking to defend my own opinions and to cooperate with others . . . "

Faculty members participating in the program are Drs. Carl Sensenig, Tryphena Humphrey, Henry Hoffman, Sara Finley, Wayne Finley, John McKibbin, James Woods, William Wingo, Charles Kochakian, Gerald Carlson and Kendrick Hare.

The eleven students now enrolled in the Institute are: George W. Bailey, Fairfield; William T. Branch, Birmingham; Samuel H. Chastain, Birmingham; Joseph N. Cunningham, Marion; John R. Scott, Birmingham; Ronald M. Stewart, Anniston; Robert H. Story, Birmingham; Peyton T. Taylor, Birmingham; Tom B. Baughan, Birmingham; John R. Denton, Birmingham; Edward L. Goldblatt, Montgomery.

DEPARTMENT OF HEALTH

BUREAU OF LABORATORIES

Thomas S. Hosty, Ph.D., Director

September 1963

Examinations for intestinal parasites.....	555
Typhoid cultures (blood, feces, urine and other).....	327
Brucella cultures.....	1
Examinations for malaria.....	2
Examinations for gonococci.....	1,818
Serologic tests for syphilis (blood and spinal fluid).....	30,623
Darkfield examinations.....	4
Examinations for diphtheria bacilli and Vincent's.....	26
Examinations for Negri bodies (smears and animal inoculations).....	208
Water examinations.....	2,559
Milk and dairy products examinations.....	4,082
Examinations for tubercle bacilli.....	3,344
Miscellaneous examinations.....	4,883
Total.....	48,432

BUREAU OF PREVENTABLE DISEASES

W. H. Y. Smith, M. D., Director

CURRENT MORBIDITY STATISTICS

1963

	Aug.	Sept.	*E. E. Sept.
Tuberculosis.....	148	85	155
Syphilis.....	102	108	108
Gonorrhea.....	423	375	334
Chancroid.....	1	5	3
Typhoid fever.....	4	1	4
Undulant fever.....	2	0	0
Amebic dysentery.....	4	6	2
Scarlet fever and strep. throat.....	26	55	31
Diphtheria.....	0	2	5
Whooping cough.....	20	14	23
Meningitis.....	2	4	6
Tularemia.....	0	0	0
Tetanus.....	1	5	2
Polio myelitis.....	20	9	11
Encephalitis.....	0	0	3
Smallpox.....	0	0	0
Measles.....	19	10	15
Chickenpox.....	2	1	3
Mumps.....	17	52	15
Infectious hepatitis.....	46	39	25
Typhus fever.....	1	0	3
Malaria.....	0	0	0
Cancer.....	809	764	531
Pellagra.....	1	4	0
Rheumatic fever.....	9	6	12
Rheumatic heart.....	35	24	19
Influenza.....	5	13	36
Pneumonia.....	103	126	114
Rabies—Human cases.....	0	1	0
Pos. animal heads.....	1	0	0

As reported by physicians and including deaths not reported as cases.

*E. E.—The estimated expectancy represents the median incidence of the past nine years.

BUREAU OF VITAL STATISTICS

Ralph W. Roberts, M. S., Director

PROVISIONAL BIRTH AND DEATH STATISTICS FOR AUGUST 1963, AND COMPARATE DATA

Live Births Deaths Causes of Death	Number Registered During August 1963			Rates* (Annual Basis)		
	Total	White	Non- White	1963	1962	1961
Live Births.....	7,209	4,535	2,674	25.2	24.9	26.1
Deaths.....	2,341	1,532	809	8.2	8.0	8.1
Fetal Deaths.....	148	61	87	20.1	18.9	20.7
Infant Deaths—						
under one month.....	157	83	74	21.8	17.6	24.5
under one year.....	195	93	102	27.0	22.4	32.3
Maternal Deaths.....	5		5	6.8	1.4	6.7
Causes of Death						
Tuberculosis, 001-019.....	21	11	10	7.3	7.5	6.1
Syphilis, 020-029.....	3	3		1.0	0.7	3.6
Dysentery, 045-048.....					0.4	
Diphtheria, 055.....	2		2	0.7		
Whooping cough, 056.....						
Meningococcal infec- tions, 057.....	2	1	1	0.7	0.4	1.1
Polio myelitis, 080, 081.....					0.4	
Measles, 085.....						
Malignant neo- plasms, 140-205.....	304	203	101	106.2	117.2	122.9
Diabetes mellitus, 260.....	32	22	10	11.2	10.7	14.2
Pellagra, 281.....						
Vascular lesions of central nervous system, 330-334.....	337	227	110	117.7	108.6	114.7
Rheumatic fever, 400-402.....	2		2	0.7		0.4
Diseases of the heart, 410-443.....	773	546	227	269.9	263.2	246.5
Hypertension with heart disease, 440-443.....	102	36	66	35.6	48.8	63.0
Diseases of the arteries, 450-456.....	48	29	19	16.8	19.2	21.7
Influenza, 480-483.....	1		1	0.3	1.1	1.1
Pneumonia, all forms 490-493.....	55	34	21	19.2	17.8	18.2
Bronchitis, 500-502.....					2.1	0.4
Appendicitis, 550-553.....	7	5	2	2.4	2.1	1.1
Intestinal obstruction and hernia, 560, 561, 570.....	16	13	3	5.6	4.3	6.4
Gastro-enteritis and colitis, under 2, 571, 0, 764.....	18	3	15	6.3	2.8	7.1
Cirrhosis of liver, 581.....	18	16	2	6.3	7.5	3.9
Diseases of pregnancy and childbirth, 640- 689.....	5		5	6.8	1.4	6.7
Congenital malforma- tions, 750-759.....	27	18	9	3.7	3.0	4.8
Immaturity at birth, 774-776.....	48	19	29	6.7	4.4	9.0
Accidents, total, 800-962.....	178	130	48	62.2	55.2	49.2
Motor vehicle acci- dents, 810-835, 960.....	92	73	19	32.1	27.4	24.6
All other defined causes.....	341	207	134	118.7	120.8	121.1
Ill-defined and un- known causes, 780- 793, 795.....	103	45	58	36.0	44.5	34.1

*Rates: Birth and death—per 1,000 population

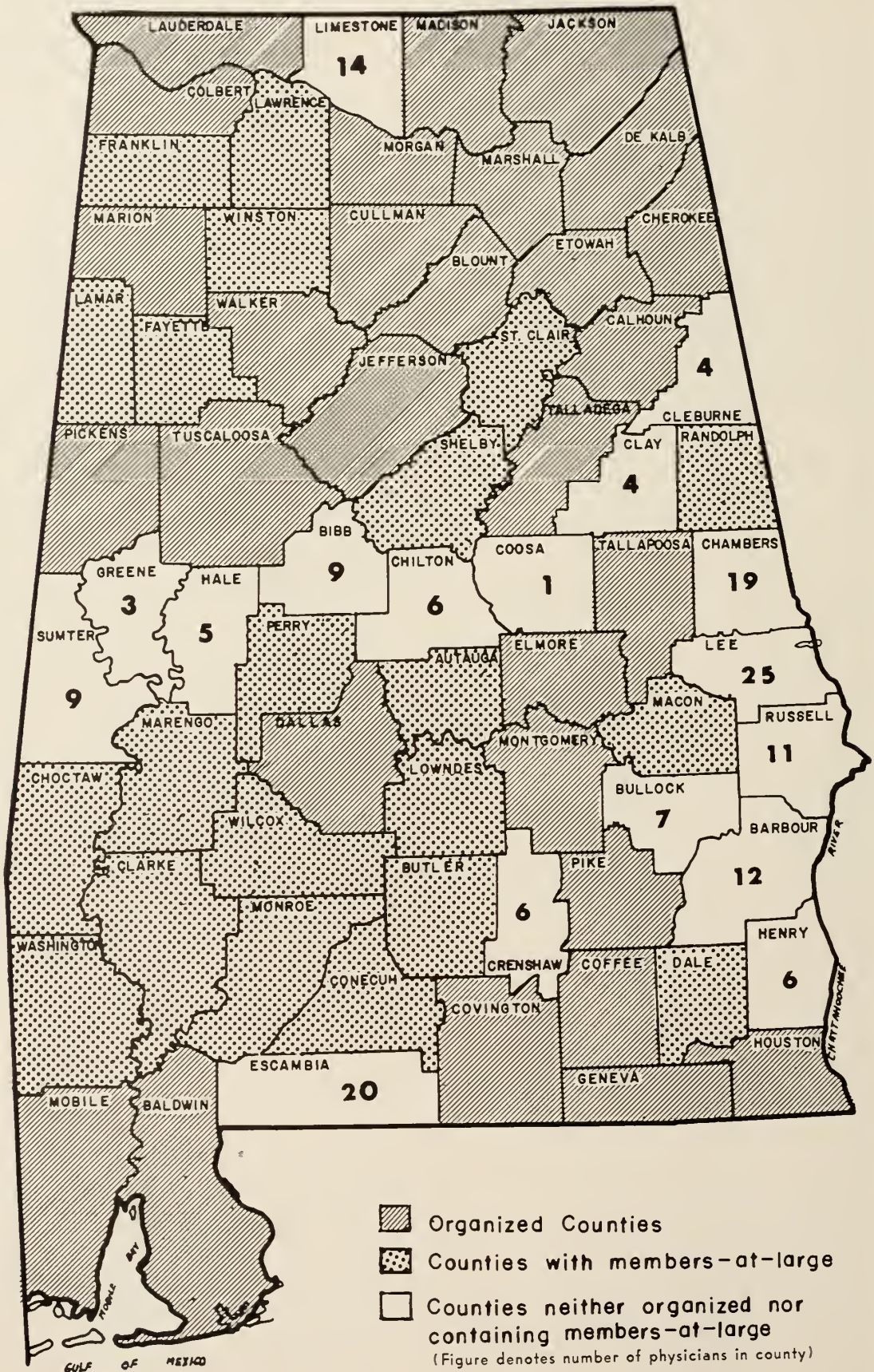
Infant deaths—per 1,000 live births

Fetal deaths—per 1,000 deliveries

Maternal deaths—per 10,000 deliveries

Deaths from specified causes—per 100,000 population

The Woman's Auxiliary



THE JOURNAL

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Preliminary Report:

Midline Bilateral Inguinal Hernioplasty Through Preperitoneal Approach

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Francis S. Springall, M. D., F. A. C. S.

I. INTRODUCTION

There are many new approaches and many new accomplishments in the field of surgery today but unfortunately some of the same old problems still plague us. One of these, for example, is the problem of herniorrhaphy and the recurrence of the inguinal hernias, in particular. Following the breakthrough by Bassini, there have been numerous efforts made to improve and modify different techniques for inguinal herniorrhaphy. The very number of the attacks used on this problem

testify to the fact that no single approach has proved satisfactory in all hands. It is probably true that more people are disabled from physical disability due to hernias than from any other single correctable defect. Thus, we desire better exposure and ease of strong repair, along with commendable recurrence rates. When we speak of a recurrence, however, we run into the same problem of terminology as to whether a femoral hernia, e.g., which may appear at a later date after an inguinal herniorrhaphy, is truly a recurrence or whether it is a different hernia. Also, the type of follow-up and the closeness of follow-up very greatly affect the results reported by any group.

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Recently, our attention has been brought to the work of Henry, several decades ago, and of Cheatele, even earlier. They approached

the problem of some hernia repairs by attacking the defect from the posterior aspect. Further interest has been manifested in this approach by Nyhus and his group who have utilized a transverse unilateral incision primarily.

One of our staff members became interested in this approach in working with both G.U. problems and herniorrhaphy problems. After review of the book anatomy, we went to the autopsy room and studied out the approach and the anatomy on numerous cadavers, with and without hernias. We differ with previous authors, however, in that for bilateral hernial repair, the midline preperitoneal longitudinal approach from the pubic tubercle region to the semilunar line of Douglas appears more efficacious. We feel that no better approach to a defect in the posterior inguinal floor is possible than posteriorly in a longitudinal plane (preperitoneally from behind). We also feel that anterior hernioplasty usually destroys transversalis fascia in arriving at the posterior-inferior defect. The added risk (which is ever present and dangerous even in experienced hands) of injury to the inferior epigastric vessels and iliac vessels from exposure inadequacy, pushes us to search for a more anatomical approach. We have found that our preperitoneal longitudinal midline approach is anatomically feasible, more exact, safer, results in more benign postoperative course, and certainly leaves the surgeon with the feeling that he has accomplished a non-compromising hernioplasty. This holds true for all bilateral inguinal hernias, including recurrent hernias.

II. ANATOMY

Here is what we found. While this region of the anatomy is somewhat familiar to all, we should review the major points, since we are approaching it from a slightly different orientation than the classical approach. (Fig. 1). As you are standing at the head of the operating table, this is the picture which would be presented to you as you look down into the pelvis. In this particular picture, the musculature of the anterior abdominal wall

has been transected and turned inferiorly in order to well visualize the pubic and nearby regions. Here you recognize the transected muscle of the right rectus which has been turned inferiorly. This is attached directly into the pubic tubercle. As we move laterally, we see Cooper's ligament, the lacuna ligament and the ileopubic tract. Moving still farther laterally, we see the femoral ring, a slight indentation in this picture. Just lateral to that is the large iliac vein and the external iliac artery, while still farther laterally is the femoral nerve. The inferior epigastric vessels appear just at the lowermost portion of the external iliac vessels and course along the roof of the area, which in this case would be the posterior part of the abdominal wall to reach the rectus muscle, and turn upward. The area involved by indirect inguinal hernias is easily visualized. The small funnel-like defect in the peritoneum which protrudes down into the cord and through the internal inguinal ring into the inguinal canal, would follow this course. The area, however, involved in a direct hernia is more difficult to visualize and is usually more easily located by palpation than it is by visualization.

In the adult we feel that the patency of the vaginalis processus creates a defect at the internal ring which necessitates a plastic repair rather than a simple ligation of the aberrant sac. In the adult we have all seen large pantaloon inguinal hernias with an ancient, indirect component which is certainly a congenital defect, which has progressed to include a mixed inguinal floor defect.

III. MATERIAL

This report deals with 100 patients. All are males, ages 25-80. These are simply consecutive cases of bilateral inguinal and/or femoral hernias appearing on Doctor Chambliss' service. In looking back on the past records of these patients, it is quite noticeable that two-thirds of the patients who enter the hospital with hernias had bilaterality either at the same time or at different times. This is to say that two-thirds of the patients entering the hospital with a hernia have, or

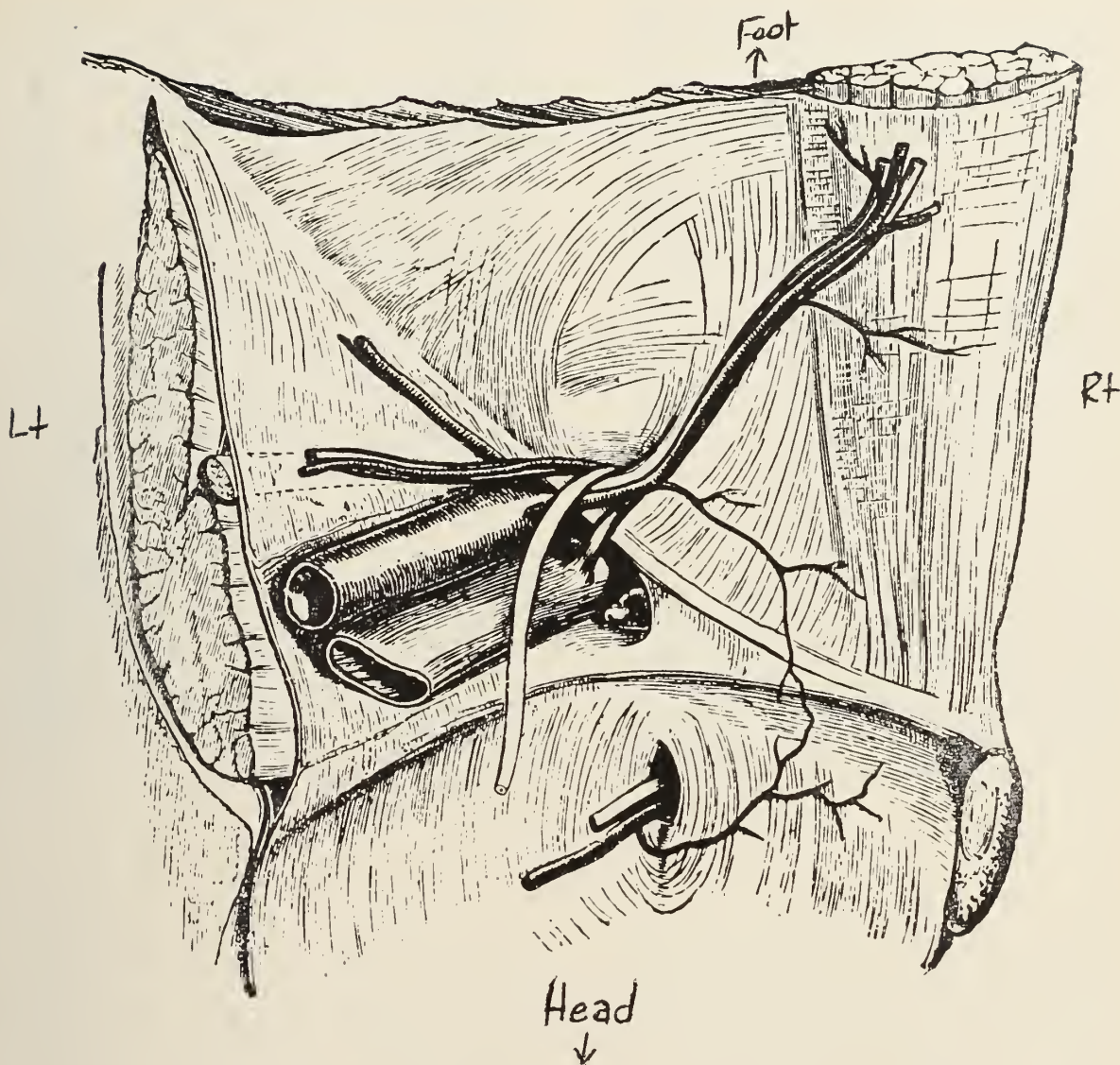


Figure 1

have had repaired, a hernia on the opposite side. It has seemed to us that this figure is rather high and would bear further investigation.

IV. PROCEDURE

At time of operation, a lower midline incision is begun just below the umbilicus and carried to the symphysis pubis. We have found that in order to accomplish this and achieve the relaxation which we need, a slightly higher spinal anesthesia is necessary.

This has to reach a level of T-5 dermatome. After realizing this we have had very little difficulty in using spinal anesthesia in this procedure. General anesthesia has also been used as satisfactorily in several cases. The operator visualizes his work best by standing on the opposite side of the table. As the rectus muscles are separated from each other, several small bleeders are usually encountered. These are carefully controlled by ligature, it having been our experience that coagulation was inadequate to control this during the procedure. It is sometimes necessary to

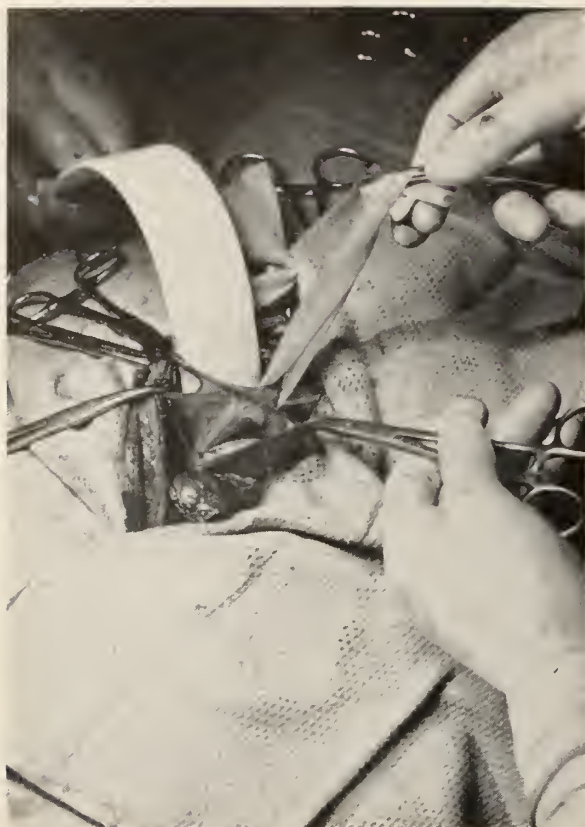


Figure 2. Orientation . . . cord and mouth of indirect hernia.

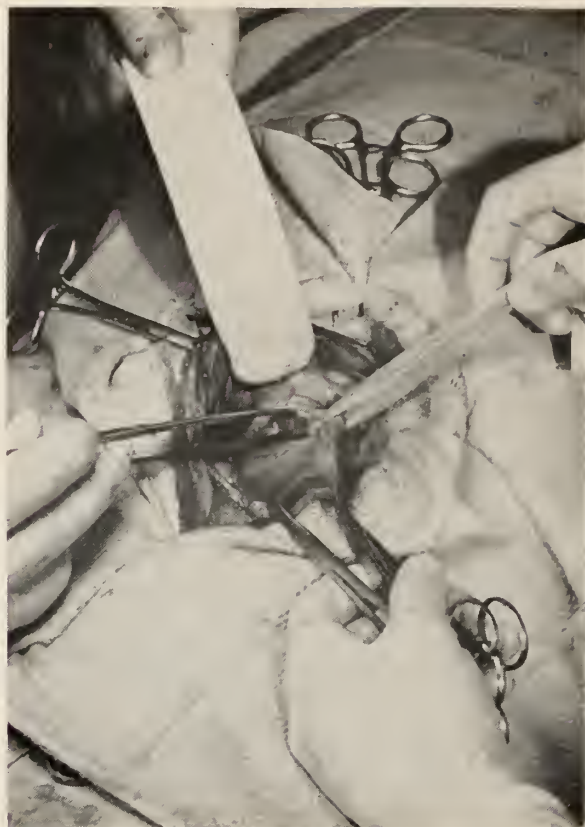


Figure 3. Demonstration of the internal ring defect with cord reflected medially.

detach the pyramidalis from the pubic bone in order to get the best visualization. Through the midline, the preperitoneal area is entered at the region of the pubis and the inguinal floor is freed-up to the internal ring area. This is begun at the lacunar ligament and carried laterally. In so doing a minimal amount of bleeding is incurred. As the great vessels are reached, the inferior epigastric vessels are isolated and divided and ligated together.

This is almost always necessary to insure adequate visualization. Sweeping slightly further laterally, then anteriorly from Cooper's ligament and along the abdominal wall, the cord is picked up as it enters from the abdominal cavity into and through the internal inguinal ring. As you remember, the vas joins the vessels here, and it is necessary to be sure that all structures are picked up. The cord is isolated with a rubber penrose drain as is often done in the classical ap-

proach. (Fig. 2) At this point, the region of the internal ring is located and, if present, the small funnel-like process of peritoneum which goes into it. The sac is then pulled proximally from the inguinal canal by gentle traction and the nipple-like formation is identifiable. The sac is opened between the peritoneum proper and internal ring and the excess tissue trimmed off; the peritoneum is then closed with non-absorbable suture. By means of the rubber tape, the cord is retracted medially which places the crura of the internal inguinal ring on a stretch (Fig. 3). These crura can then be felt and sometimes visualized. We now routinely close the crura together lateral to the cord with several interrupted sutures (Fig. 4); an Allis clamp across the crura aids in placing the sutures. We do not feel that the medial corner of the ring usually requires repair. At first we did not do this but at the present time we have made it routine, as have others.



Figure 4. Demonstration of repaired crural defect lateral to cord.



Figure 5. Demonstration of medial part of Hesselbach's floor defect.

Attention is then turned to the direct area of Hesselbach's triangle. (Fig. 5) This repair is carried out with the similar general principle as McVay has used; i.e., attaching the transversalis fascia to Cooper's ligament and the ileo pubic tract. This can be done with a row of interrupted sutures beginning at the lacunar ligament and extending laterally to the iliac vein, swinging the cord laterally for exposure. (Fig. 6) We have made no attempt to so enter the sheath of the vein as has been described by some, and indeed find it invitingly easy to overdo this. It is necessary to leave adequate room for the vein itself, lest the venous flow be compromised. Minimal bleeding is encountered during the course of this procedure. No drains are used. Attention is then turned to the opposite side where a similar procedure is carried out. It has been our observation that the second side is always easier to accomplish than the first side. This may have to do with the pre-

liminary freeing-up of the peritoneal envelope from the surrounding structures. Upon completion of both sides, the envelope is allowed to again refill the original position. The recti muscles are reapproximated with catgut sutures, very loosely tied. The pyramidalis is re-inserted if necessary. From there on out, routine closure in layers is accomplished. Postoperatively, the sutures are removed at the usual time. Early ambulation is encouraged.

V. RESULTS

As you will note from the title, this is a preliminary report. Our series covers two year follow-ups, consequently, we do not feel that we can at this time draw any wide, sweeping, conclusions from it. It is interesting to note, however, a few things which have occurred in these cases during this one year follow-up. During this time we have

had three recurrences. A recurrence, in the sense in which we are using it, is any hernia which again shows up in the general region of the groin after this procedure has been carried out. In each of these three cases the patient appeared later with a definite complete indirect inguinal hernia. In looking back over our work and our records, we realized that we had not at the time of the first of these operations been routinely closing the crura around the internal ring. In a direct hernia repair as described, it was, therefore, felt that what we had done was to actually overlook the indirect inguinal hernias which were present at that time and made themselves known shortly thereafter. We feel that under spinal anesthesia and Trendelenburg position, some vaginalis processes appear to be indefinite peritoneal elongations by the cord and can be separated all too easily. After this realization, we have explored the peritoneum in the region of the internal ring if in doubt. We regularly close the crura in the manner which I have just described to you. After we adopted this procedure we have had no further recurrences; time will tell us whether this is the entire answer or not. We feel that proper ring repair is more important than a high ligation in the adult. In this approach we have not seen the feared sequelae voiced by many surgeons prior to this study; i.e., (a) frequent rectus muscle hematomas, (b) dead-space phenomena necessitating drainage with the resulting incisional-hernial defect, (c) increased incidence of wound infections from retraction trauma, and (d) time-consuming preperitoneal fat dissection in the obese patient.

VI. DISCUSSION

In our brief trial of this method, we have encountered several favorable and several unfavorable aspects of this particular procedure. For example, on the positive side there is the fact that we have now a single incision from which we can repair bilateral hernias. Also, there is a matter of time involved. This double procedure can be ef-



Figure 6. Demonstration of repaired Hasselbach's floor defect, using Cooper's ligament laterally and the strong transversalis fascia medially.

fected in less time in our own hands than that which is usually taken for the classical approach to a bilateral hernia. Our operative time, with a single assistant, is usually one hour. The next point, which probably is questioned by some, is that we obtain almost invariably a very strong repair, as we feel the fascia used medially is a strong and definite structure. On each of the three recurrences just mentioned, we have again had the opportunity of feeling the direct floor, and on each occasion the floor was quite firm and solid and there was no evidence of weakness in that area. The assistant who does the retracting, is primarily unable to see your dissection as well as the surgeon; this may or may not be of importance, and yet when it comes to such things as securing bleeding vessels, tying, etc., an assistant who can visualize the area well would be of more help. Another point which has to be considered is

that of using a portal of entry, which up until the present time has mainly been used by the G. U. department. We must realize that the men with whom we are working are constantly aging as a group and consequently are getting into the realm of G. U. problems, and particularly of prostatic problems. We are now utilizing the approach which many G. U. men use for prostatic work. Will this have an effect on a secondary operation? Quite possibly it will. So far we have not encountered this difficulty as a reality; however, we feel sure that over a period of time it will manifest itself. We have accomplished G. U. procedures and strong chronic inguinal hernia repair simultaneously.

We feel this approach is efficacious also for *large* unilateral direct and femoral hernias when fascial repair is so important. Concomitant scrotal hydroceles are handled by partial excision of the sac or a repair by a separate scrotal incision. In the case of complete indirect hernias, we leave the distal sac open.

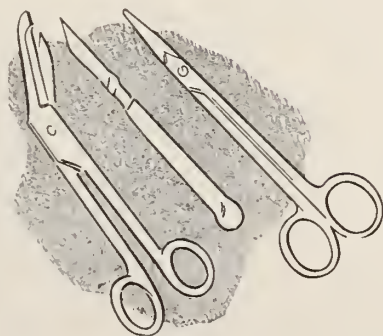
VII. SUMMARY

In summary then, this is a preliminary report of 100 cases of bilateral inguinal herniorrhaphy done through midline incisions. We have briefly reviewed the anatomy, the material which we are here presenting, the procedure itself, and have mentioned preliminary results. *We are at present considering the in-*

section of plastic prostheses to bridge large fascial defects in the inguinal region in lieu of approximation of the peripheries of the defects, and have already begun this technique. Working in the preperitoneal region, via midline posterior approach, in the repair of posterior inguinal defects has been discussed with its advantages over the classical anterior approach.

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The Treatment of Hypertension With Chlorthalidone Alone and in Combination With Reserpine

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Joseph A. Chazan, M. D.

Leo S. Richard, M. D.

INTRODUCTION

The introduction of the sulfonamyl diuretics in 1957 markedly improved the treatment of the edematous patient, and shortly thereafter the antihypertensive properties of these drugs became apparent.^{1,2} Although much is known of the pharmacology of these drugs as diuretics, their mode of action in lowering blood pressure is little understood.^{3,4} Despite the lack of knowledge regarding their exact mechanism of action, the "thiazides" have proved to be of great value in the treatment of hypertension.^{5,6,7}

Among the numerous derivatives studied, chlorthalidone (3-hydroxy-3-(4-chloro-3-sulfamylphenyl) phthalimidine exerts its effect rapidly, has a long duration of action, and causes few side effects.⁸ There are numerous reports on the diuretic properties of chlorthalidone, but comparatively few on its antihypertensive properties.^{9,10}

The purpose of this investigation was to further evaluate chlorthalidone alone and in combination with reserpine in the treatment of hypertension.*

METHODS AND MATERIAL

Chlorthalidone was administered alone and in combination with reserpine to 33 ambulatory patients with hypertension. Thirty of

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THE TREATMENT OF HYPERTENSION

the 33 patients were Negroes; ages ranged from 39 to 70 years, 78 per cent (26 patients) being between 40 and 59 years of age; and 22 of the patients were females. These patients attended the outpatient department of the University of Alabama Medical Center and were seen at intervals of two to three weeks. The blood pressure was measured on three separate clinic visits during medication with a placebo, and the average of these values was used as a baseline or control value.

The study was divided into three nine to twelve week periods: Period A. Chlorthalidone, 50 to 100 mg daily, was administered as a single dose at breakfast. Period B. Chlorthalidone, 50-100 mg, plus reserpine, 0.25 mg, was administered similarly. Period C. The reserpine was discontinued, and chlorthalidone was again administered alone. All tablets used in the study were identical in appearance, and patients did not know when changes in medication occurred.

All patients had been studied for remedial causes of hypertension prior to being in-

cluded in this investigation. Thirty-two (97 per cent) had evidence of hypertensive cardiovascular and/or renal disease. Most of the patients have been followed in this hypertensive clinic for several years, have kept their appointments regularly and taken their medication as prescribed.

Laboratory data including hemograms, urinalyses, blood sugar, serum amylase, blood urea nitrogen, and uric acid levels were obtained at intervals throughout the study.

RESULTS AND DISCUSSION

The age, sex, race, average blood pressure values prior to therapy and during Periods A, B, C, and chlorthalidone dosages are presented in Table I.

As a measure of the severity of hypertension the following classification was used: (a) Mild hypertension—those patients with a control mean blood pressure of 125 mm. Hg or less and without evidence of cardiovascular

TABLE I
Blood Pressure Response to Chlorthalidone Therapy

NUMBER	AGE	SEX	RACE	CONTROL BLOOD PRESSURE	BLOOD PRESSURE CHLORTHALIDONE	BLOOD PRESSURE CHLORTHALIDONE AND RESERPINE	BLOOD PRESSURE CHLORTHALIDONE	CONTROL MEAN BLOOD PRESSURE**	MEAN BLOOD PRESSURE CHLORTHALIDONE	MEAN BLOOD PRESSURE CHLORTHALIDONE AND RESERPINE	MEAN BLOOD PRESSURE CHLORTHALIDONE	DAILY DOSAGE OF CHLORTHALIDONE
1	57	F	N	211/117	131/87	137/89	139/86	118	102	105	104	12 5 mgm.
2	58	M	N	167/118	121/85	99/79	---	134	97	86	-	25
3	49	F	N	176/119	141/103	129/95	138/99	138	116	106	112	50
4	70	F	N	244/122	145/81	142/72	147/77	163	102	95	100	50
5	60	F	N	160/110	149/91	151/86	138/87	127	110	108	104	50
6	57	F	N	180/110	132/84	125/74	136/86	133	100	91	103	50
7	55	F	N	190/116	164/104	166/103	168/98	141	124	124	121	50
8	46	F	N	215/116	149/93	113/79	134/89	149	112	90	104	50
9	52	F	N	216/112	190/97	153/84	153/83	147	128	107	106	50
10	47	F	N	193/108	149/82	139/84	153/94	136	104	102	114	50
11	58	M	N	206/128	137/95	134/93	157/111	154	109	107	126	50
12	57	M	N	188/120	137/94	150/91	161/100	143	108	111	120	50
13	47	M	N	188/125	159/121	137/99	143/107	146	134	112	119	50
14	52	M	N	240/140	159/94	155/89	157/89	173	116	111	112	50
15	64	M	W	214/118	145/102	135/95	138/101	150	116	108	113	50
16*	48	F	N	246/156	---	210/127	219/133	186	-	155	162	100
17	56	F	N	206/104	151/87	142/80	142/85	138	108	101	104	100
18	64	F	N	240/124	196/101	160/89	159/89	163	133	131	112	100
19	53	F	N	222/126	175/106	139/89	148/100	156	128	106	116	100
20	54	F	N	204/127	153/104	149/95	145/95	153	120	113	112	100
21	42	F	N	230/120	195/117	168/99	146/86	157	143	122	106	100
22	50	F	N	199/122	141/103	140/95	---	148	116	110	-	100
23	50	F	N	224/140	186/124	164/106	---	168	145	125	-	100
24	49	F	N	224/114	187/86	199/83	185/95	151	120	122	125	100
25	39	F	N	220/150	177/125	151/98	---	173	142	116	-	100
26	63	F	N	235/128	205/106	160/86	192/103	164	139	111	133	100
27	46	F	N	243/108	191/103	172/95	179/99	153	132	121	126	100
28	48	F	N	260/146	203/128	167/106	169/111	184	153	126	130	100
29	55	M	N	220/120	200/113	203/117	207/115	153	142	146	146	100
30	58	M	N	205/125	185/118	173/106	180/126	152	140	128	144	100
31	52	M	N	190/120	151/95	153/88	159/103	143	114	110	122	100
32	41	M	W	180/120	164/114	155/113	176/128	140	131	127	144	100
33	50	M	W	204/114	175/101	155/87	177/97	144	126	110	124	100

* * * BLOOD PRESSURE VALUES ARE AVERAGES OF THREE CONSECUTIVE CLINIC VISITS.

** THE MEAN BLOOD PRESSURE IS THE DIASTOLIC PRESSURE PLUS ONE-THIRD OF THE PULSE PRESSURE.

PLACED ON CHLORTHALIDONE AND RESERPINE INITIALLY BECAUSE OF MARKEDLY ELEVATED CONTROL BLOOD PRESSURE.

THE TREATMENT OF HYPERTENSION

or renal involvement. The mean blood pressure value is the diastolic pressure plus one-third of the pulse pressure. (b) Moderate hypertension—a control mean blood pressure of 126-139 mm. Hg with or without evidence of cardiovascular or renal involvement. (c) Severe hypertension—a control mean blood pressure of 140 mm. Hg or greater with evidence of cardiovascular or renal involvement. According to this classification, the majority (82 per cent) of the patients had severe hypertensive vascular disease. (Table II).

TABLE II

Severity of Hypertension Prior to Therapy

SEVERITY	NUMBER OF PATIENTS	PERCENTAGE
Mild (125 mm. Hg. or less)	0	0
Moderate (126-139 mm. Hg.)	6	18
Severe (140 mm. Hg. or over)	27	82
Total	33	100

One patient (No. 1, 57 year old Negro female) experienced periods of weakness and "light-headedness" while receiving 50 mg of chlorthalidone daily. Her dose was gradually reduced to 25 mg every other day, and her blood pressure has been maintained at 136/83 mm. Hg. Blood pressure prior to therapy was 211/117 mm. Hg.

Another patient (No. 2, 58 year old Negro male) responded to 25 mg of chlorthalidone with a fall in blood pressure from 167/118 mm. Hg to 121/85 mm. Hg. The addition of reserpine resulted in further lowering of blood pressure to 99/79 mm. Hg. At this point all medication was discontinued, and the patient remained normotensive for over two months. At present his blood pressure is 158/100 mm. Hg without therapy.

TABLE III

The Mean Blood Pressure before and after 50 mgm. of chlorthalidone daily, with and without reserpine.

	PERIOD			
	A	B	C	
	Control Mean B.P.	Chlorthalidone Mean B.P.	Chlorthalidone Reserpine Mean B.P.	Chlorthalidone Mean B.P.
Mean Blood Press.	146.	114	105	112.
Standard Deviation	12	10	9	8
Standard Error	3.4	2.8	2.5	2.5
Number	13	13	13	13

Thirteen patients were maintained on 50 mg of chlorthalidone daily, and the other 18 required 100 mg daily. Table III characterizes the response of the 13 patients treated with 50 mg dosages. The difference in mean blood pressure between control values and Period A (chlorthalidone) is statistically significant (p is less than 0.01). The addition of reserpine (Period B) enhanced the antihypertensive effect of chlorthalidone. When reserpine was discontinued, Period C (chlorthalidone 50 mg), the mean blood pressure values returned to levels comparable to those observed during Period A (chlorthalidone 50

TABLE IV

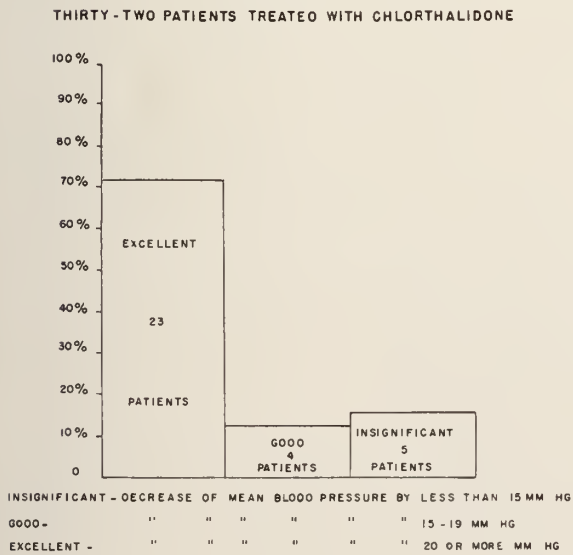
The Mean Blood Pressure before and after 100 mgm. of Chlorthalidone daily with and without reserpine.

	PERIOD			
	A	B	C	
	Control Mean B.P.	Chlorthalidone Mean B.P.	Chlorthalidone Reserpine Mean B.P.	Chlorthalidone Mean B.P.
Mean Blood Press.	157	131	120	127.
Standard Deviation	14	12	14	17
Standard Error	3.2	3	3.2	4.5
Number	18	17	18	15

mg). Table IV characterizes the response of the 18 patients who received 100 mg of chlorthalidone. Statistical significance is present here also (p is less than .01) when mean blood pressure values for the control period are compared with those during therapy. Again, reserpine enhanced the effect of chlorthalidone (Period B) and blood pressure levels during Period C (chlorthalidone 100 mg), after reserpine was discontinued, were comparable to levels observed during Period A (chlorthalidone 100 mg).

The response to therapy was considered unsatisfactory if the mean blood pressure fell less than 15 mm. Hg, good if the decrease was between 15-19 mm. Hg, and excellent if the mean blood pressure fall was greater than 20 mm. Hg. Figure 1 shows that 23 (72

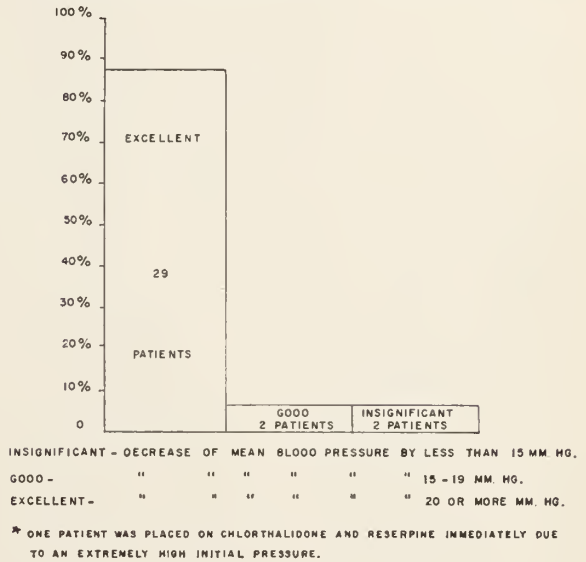
FIGURE I



per cent) of the patients treated with chlorthalidone had an excellent response and four (12.5 per cent) had a good response. Only five patients (15.5 per cent) had an unsatisfactory response by these criteria.

FIGURE II

THIRTY-THREE PATIENTS TREATED WITH A COMBINATION OF CHLORTHALIDONE AND RESERPINE



The addition of reserpine enhanced the effectiveness of chlorthalidone as is shown in Figure 2. Twenty-nine (87 per cent) of the 33 patients treated with this combination had an excellent response, two (6.5 per cent) patients had a good response, and two (6.5 per cent) an unsatisfactory reduction in blood pressure.

Serum electrolyte determinations were performed periodically and when prompted by the clinical course, but no abnormalities were documented. Determinations of blood urea nitrogen levels were also performed at intervals throughout the investigation. No significant alterations attributable to therapy occurred. Those patients with chronic renal disease showed minor fluctuations during therapy. One patient (No. 26, 63 year old Negro female) with chronic renal disease demonstrated a rise in blood urea nitrogen to 47 mg per cent and uric acid levels to 15.2 mg per cent as her blood pressure fell. This rise in uric acid was associated with symptoms and signs of an acutely inflamed knee. The joint manifestation subsided when chlorthalidone was discontinued. Two months

later the uric acid level was 9.8 per cent, and the blood urea nitrogen was 21 mg per cent.

Twenty-one patients had an elevation of serum uric acid prior to therapy with chlorthalidone. Most of these patients had received "thiazide" preparations in the recent past. Six patients showed slight progression of this elevation during therapy, and three showed a decrease. Seven of 11 patients who had had normal serum uric acid levels prior to therapy demonstrated an elevation of the serum uric acid while receiving chlorthalidone. Thus, 28 (85 per cent) of the group had elevated uric acid levels during therapy.

An abnormal glucose tolerance curve was demonstrated in one patient (No. 15, 64 year old white male) during therapy. There was no documentation of his glucose tolerance prior to treatment, but a normal curve was obtained a few weeks after chlorthalidone was discontinued. Serum amylase determinations were performed sporadically upon the group, but no abnormal values obtained. Another patient (No. 6, 57 year old Negro female), with a history of peptic ulcer, developed persistent diarrhea, weight loss of 13 pounds, and symptoms of peptic ulcer after receiving chlorthalidone for seven months. X-ray evidence of active duodenal ulcer and small bowel changes suggestive of a malabsorption syndrome were present. Laboratory evidence of pancreatic dysfunction was lacking. Antihypertensive therapy was discontinued and an ulcer regimen prescribed. All gastrointestinal symptoms promptly subsided, and at the end of two months weight had been regained, and the gastrointestinal tract was normal upon radiological examination. Blood pressure, which had been normal during chlorthalidone therapy, had reverted to pretreatment levels.

Side effects were uncommon. Several patients complained of transient gastrointestinal distress and mild anorexia soon after therapy was begun. Seven patients who were receiving digitalis on a maintenance regimen received no potassium supplements. No evidence of arrhythmias was observed in these patients. One patient (No. 33, 50 year old white male) who had residua of central

nervous system disease experienced dizziness, nausea, and vomiting while receiving chlorthalidone. However, these symptoms were present at intervals prior to treatment and subsided despite continuance of chlorthalidone. One patient (No. 31, 52 year old Negro male) had an episode of pyelonephritis, which responded to sulfisoxazole.

SUMMARY

(1) Thirty-three patients were treated with chlorthalidone alone and in combination with reserpine.

(2) Two patients responded well to very small amounts of chlorthalidone 25 mg every other day or less. Twenty-five of the remaining 31 patients demonstrated a good or excellent response to 50 or 100 mg of chlorthalidone daily. The addition of 0.25 mg of reserpine further enhanced the antihypertensive effect.

(3) Side effects were uncommon. Several patients complained of transient gastrointestinal distress and mild anorexia soon after drug therapy was begun.

(4) Twenty-eight (85 per cent) of the patients had elevated uric acid levels during therapy, and one patient had symptoms compatible with gouty arthritis. There were no serum electrolyte abnormalities documented and no significant alterations in blood urea nitrogen levels as a result of chlorthalidone therapy occurred.

(5) Evidence suggests that an abnormal glucose tolerance curve in one patient and gastrointestinal abnormalities in another were dependent upon chlorthalidone therapy.

CONCLUSIONS

Results of this investigation demonstrate and confirm the effectiveness of chlorthalidone as an antihypertensive agent when used alone and in combination with reserpine.

A similar tendency toward abnormal uric acid and blood sugar levels which occurs dur-

ing "thiazide" therapy is also present during therapy with chlorthalidone.

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Traumatic Rupture Of The Normal Gallbladder

John M. Jackson, M. D.

Eufaula, Alabama

The usual anatomical position of the gallbladder is such that it is well protected from direct trauma by the overlying liver. In the absence of penetrating wounds of the abdomen, traumatic rupture of the normal gallbladder is uncommon. Without associated intra-abdominal visceral injury, traumatic rupture of the gallbladder is indeed rare.

CASE REPORT

LNH No. 325,404—a 48-year old colored male was admitted to the hospital on April 9, 1960, in a semi-comatose condition.

The history obtained from the patient's mother revealed that he had been involved in an automobile accident while riding as a passenger in the right front seat. He was apparently thrown from the vehicle and sustained multiple lacerations of the head and face. Initially he was seen at another hospital where the lacerations were sutured under local anesthesia. Skull X-rays were negative for bony injury. While under observation, an episode of hypotension occurred and 1500 c.c. of D-5 Ringer's lactate was administered intravenously. Other treatment included tetanus antitoxin, tetanus toxoid, and intramuscular penicillin. He was transferred to this hospital six hours following injury.

Physical examination on admission revealed a semi-comatose colored male with a strong

odor of alcohol. The admission blood pressure was 90/60 and the pulse rate was 120 per minute. There was no evidence of increased intracranial pressure and no localizing neurological signs. The patient responded only to painful stimuli. The lungs were clear to auscultations. Bowel sounds were absent. The abdomen was flat and revealed no external evidence of trauma. There was generalized abdominal tenderness more marked in the right upper quadrant as evidenced by responsiveness to palpation. Rectal examination was negative.

White blood count on admission was 25,500 with 86 per cent polymorphonuclear cells. The hemoglobin was 16.5 grams. Urine revealed two plus red cells, a rare pus cell, four plus albumin and specific gravity of 1.006. Serum amylase was 153 units. Lateral decubitus X-ray of the abdomen revealed no evidence of pneumoperitoneum. There were fractures of the right eighth and ninth ribs in the anterior axillary line. Diagnostic paracentesis revealed blood and bile in the right upper abdomen.

Laparotomy was performed four hours after admission. Upon entering the abdomen, a large quantity of bile stained fluid was encountered. Examination of the gallbladder revealed a longitudinal 1.0 cm. tear in the fundus. The common duct and cystic duct were of normal caliber and thickness. The gallbladder was removed and the abdomen thoroughly explored. No stones were found either in the gallbladder or free in the abdominal cavity and no further intra-abdominal injuries were noted.

Postoperatively, further X-rays revealed a comminuted fracture of the left pubic bone at the junction of the body and superior ramus,

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and a fracture of the ascending ramus of the left ischium. These fractures were treated with bed rest.

The patient required a second laparotomy one month following injury for relief of small bowel obstruction secondary to adhesions. Following this procedure, the patient had no further complications.

DISCUSSION

Rupture of the gallbladder may be of two types: (1) laceration of the wall of the gallbladder and (2) traumatic amputation of the gallbladder, or as termed by Brown,¹ "Traumatic Cholecystectomy." The force responsible for these injuries is usually of a crushing or twisting nature, or a blow to the abdomen by a blunt object.

The morbidity following laceration of the gallbladder results from the effects of bile in the peritoneal cavity. The nature of the toxic effects of intraperitoneal bile is controversial. Some authors feel that sterile bile in the peritoneal cavity is innocuous and toxicity occurs only when bacterial contamination occurs. Others³⁻⁸ feel that absorption of bile salts and bile acids cause lethal toxicity. Mason and Equinton⁴ concluded that there were at least two factors operative in the lethal complications of choleperitoneum: (1) the primary injury to the peritoneum by the toxic bile salts, and (2) the secondary shock from loss of fluid from the vascular system.

The diagnosis of rupture of the gallbladder in the absence of penetrating wounds is rarely made prior to surgery. Immediately following the injury, when no grave concomitant injuries are present, there are relatively few signs of intraperitoneal injury. In reported cases the most common finding has been signs of progressive peritoneal irritation with localization in the right upper quadrant of the abdomen. X-ray examination may reveal evidence of free fluid or paralytic ileus. Paracentesis may yield bile or bile stained fluid.

The only successful treatment of rupture of the gallbladder is by surgery. Since 1898 there has been but one reported mortality where surgical treatment has been carried out.⁷ Prior to 1898 there were no survivals regardless of treatment. The surgical procedure varies with the extent of the injury and the condition of the patient. If the laceration is small and the gallbladder is salvageable, some authors feel simple suture of the laceration² or cholecystostomy is adequate. If the injury is extensive, then cholecystectomy is preferred. Simple paracentesis, other than as a diagnostic procedure, is, of course, wholly inadequate.

SUMMARY

Traumatic rupture of a normal gallbladder in the absence of penetrating wounds of the abdomen is rare.

The usual signs and symptoms of ruptured intra-abdominal viscera are frequently lacking on initial examination.

The treatment for rupture of the gallbladder is surgical.

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IDIOPATHIC HEMOCHROMATOSIS

Mel Butler

There is at present some discussion in the literature as to whether there really is such an entity as idiopathic hemochromatosis. McDonald and Mallory¹ have questioned such a diagnosis without a post mortem examination, however Zimmerman et al² say they can distinguish "hemosiderosis characterized by overload without tissue damage from hemochromatosis characterized by overload with damage to liver, pancreas and myocardium." These authors further state that the "presence of heavy hemosiderin deposits and cirrhosis in a liver biopsy specimen is evidence for a presumptive diagnosis of hemochromatosis."

The purpose of this paper is to report a case of a female with a tissue and clinical diagnosis of idiopathic hemochromatosis in which phlebotomy and the new chelating agent DFOM-B were used.

Case Report:

This 48 year old white female was seen in our hospital in 1962 with a history of intermittent nausea and vomiting of two weeks duration. Her history preceding the admission to University Hospital is of interest:

Past History—Three years previously the patient had been diagnosed as having idiopathic hemochromatosis, at another hospital. She had presented with similar complaints of nausea and vomiting and during her hospital course the serum iron was found to be 200

mcg per cent. The fasting and two hour post prandial blood sugars were both within normal limits. Minimal bronzing was noted at the time.

The patient was noted to be a poor historian, saying she had had her last menstrual period eight years previously as a result of some "shots" given her by a physician in another state. She could not remember the name of the physician so no record was obtained regarding this feature of her history.

In light of the high serum iron an open liver biopsy was done and a tissue diagnosis was made as being compatible with hemochromatosis. No source of excess iron intake could be found and there was no evidence of a hemolytic process at work.

It was decided that phlebotomy would be the best treatment for the patient and in the ensuing two years forty units of blood were withdrawn without untoward results.

Present Admission—In December of 1962 the patient was admitted to University Hospital with vague abdominal pains and the above mentioned nausea and vomiting. These latter symptoms were made worse by eating. The patient denied hematemesis or melena but stated she had lost some ten to twelve pounds in a three month period.

Physical examination revealed a thin, slightly bronzed, middle-aged female who appeared chronically ill and somewhat anxious. The significant findings were limited to the abdomen. The liver was palpable four finger breadths below the right costal margin and was felt to be serrated. The spleen

Mr. Butler is a senior student at the University of Alabama Medical College.

was not palpable and the rest of the examination was within normal limits.

Six years prior to admission the patient had received electro-shock treatment for a psychoneurotic disorder but had been on no regular drug therapy of any kind since that time.

Patient reported her father died of "cancer of the liver" but no other relatives were known to be affected by an ailment such as she had.

During her hospitalization the following values were obtained: Serum iron—78 mcg per cent; total iron binding capacity—194 mcg per cent (39 per cent); fasting blood sugar—80 mgm per cent; 2 hr. p.c. sugar—68 mgm per cent; BSP—0 per cent; prothombin time—100 per cent; PCV—45 per cent; WBC—6700; EKG—non-specific S-T changes.

The patient was started on DFOM-B, (desferrioxamine-B in the form of Desferal.[®] CIBA), 200 mgm. t.i.d., intra muscularly for five days to see if the serum iron could be lowered even further. The following is a chart of the urinary excretion of iron:

Day	Fe in mgm./24 hrs.
1	not measured
2	.9
3	.6 DFOM-B started
4	.9
5	1.15
6	.42
7	.89

In the course of the DFOM-B therapy a punch biopsy of the liver was made and the tissue compared with the slides made from the initial open liver biopsy. The pathologist reported that only slightly more iron was found in the tissue than in the normal liver and only minimal fibrosis, not the picture one would expect to see in hemochromatosis, however when the biopsy was compared with the original slides there was a striking contrast in the amount of iron and in light of these changes and the clinical history a diagnosis of hemochromatosis was again made.

The use of DFOM-B, as shown above, did not give dramatic results. The chelating agent forms a soluble iron complex and is excreted in the urine.³ From our figures it appears that the drug did not increase the excretion of iron. The laboratory and pathological studies give evidence that the classic treatment of phlebotomy was of much benefit in this case. DFOM-B has been used with some success in idiopathic hemochromatosis,⁴ and very excellent reports have followed its use in secondary hemochromatosis. In normals the iron is usually increased from 1-3 mgm. daily.

The patient was seen again in seven months during which time no phlebotomies were performed. The serum iron was 170 mcg per cent and the FBS was still normal. The only new finding was rather marked osteoporosis. The liver was still down four finger breadths and the patient presented a good deal of emotional problems but otherwise appeared to be doing well.

Summary: A case of probable idiopathic hemochromatosis in a female, (without functioning ovarian tissue), is presented. The results obtained by the use of phlebotomy and a short trial with DFOM-B is also presented. The case is a complex one in that the patient is female and the usual triad of cirrhosis, diabetes and bronzed skin was not present, nevertheless the biopsy provides a reasonable basis for making a diagnosis of hemochromatosis.

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Editorials

THE EXECUTIVE SECRETARY

An intelligent and dedicated young executive has accepted the responsibility of serving the more than two thousand members of our State Medical Association. He has been in the central office since June, 1957. During that time, he has become known as "Dub." We expect this name to stick and to become a title used in friendship and respect.

Mr. William Venton "Dub" Wallace officially became the Executive Secretary of the Medical Association of the State of Alabama by action of the Board of Censors on October 23, 1963. A study of the needs of the Association and of the qualifications of Mr. Wallace was made. The choice followed deliberations. The vote was unanimous.

The Board stipulated that Mr. Wallace give up his part time position with the Alabama Chapter of the American Academy of General Practice. This will be a loss to a very worthy segment of our profession, but it will be a gain for the whole.

W. V. Wallace is a native of Decatur, Alabama. He attended Alabama Christian College and Florence State College. He received the B. A. degree in journalism from the University of Alabama in 1957. He came to the

Association in 1957 as Executive Assistant. He served the Alabama Academy of General Practice from November, 1961 to the present time as its Executive Director. He is a member of the Lakewood Church of Christ. He is married to the former Sherry Eastep. They have three daughters.

On page 176 of this issue of the *Journal* is a letter to the membership from Mr. Wallace. It suggests his approach. We perceive four points. The first is perpetuation of all the worthy functions of organized medicine. The second is economy of operation. Though not completely new, the third is personal services to individual members. Again the reader is referred to page 176 of this *Journal*. The fourth point is stated in general in the letter. It concerns the Board of Censors.

Members may not be fully aware of the great burdens resting upon the ten members of the Board. There has been an ever increasing work load in each of the three capacities in which these ten dedicated and honored electees sit. They have always discharged their offices commendably. They serve a system superior to all others, and it is not in need of change. Mr. Wallace recog-

nizes these facts. What is needed is the co-operation of every member and every committee of the Association to carry on the work. Each county society must discharge its duties with efficiency. These will lighten the work of the Board. This is the fourth point in the program. "Dub" Wallace stands ready to work with all.

Lest we overlook a very practical point, it must be remembered that W. V. Wallace has pride and humility and that he is another human being with a job to do. He has responsibility to fulfill, first to God, second to family, and third to the Association. We predict he will meet them in their proper order.



AMA-ERF Needs Your Help

The Medical College of Alabama was presented a check in the amount of \$12,523.95 at the 1963 Annual Session of the Medical Association of the State of Alabama. This check represented Alabama's share of contributions from the American Medical Association Educational and Research Foundation in 1962. This generous gift was made possible because of the unselfish efforts of the members of the medical profession and the Auxiliary.

As of September this year the total contributions from Alabama from all sources amounted to \$3,875.10. A total of \$8,200 had been contributed by Alabamians for this same period last year. It is obvious that the AMA-ERF program will be hard put to make a good showing by the end of this year unless considerable contributions are made now.

Recently a letter was mailed to every member of the Association suggesting that they contribute to the AMA-ERF in lieu of exchanging Christmas gifts. This idea along with the Auxiliary's varied methods of fund-raising would, if followed, bring Alabama nearer to realizing its goal for 1963.

The Medical College depends on this check each year to meet expenses not accounted for in its budget. Many medical students depend on this fund to finance their education. Let's all do our part.



The Staff

of the

Medical Association

and the

Editors of this Journal

wish you

A Happy Holiday Season

and

Best Wishes for the Coming Year





A NOTE FROM

THE EXECUTIVE SECRETARY

Dear Doctor:

I wish it were possible to visit each of you in order to discuss items of interest to your Association. Since this is neither practical nor economical, I am taking the next best avenue of approach—the pages of this *Journal*—in order to convey a message I believe to be timely and meritorious.

As announced in the November issue of the *Alabama M. D.*, the State Board of Censors at its October meeting appointed a new executive secretary. In this capacity, I find myself in somewhat of a dilemma in that for the first time during my six years with the Association I am experiencing the vastness of its total program.

It may be that some members are not aware of one aspect of this total program—personal services rendered by the central office to Association members. Following are some of the areas in which the central office may be of service to you: Physician Placement Service, Personal Public Relations, Medicare, Taxation, Insurance, Reference Materials, Data on Physicians, Hospital Data,

Collection Agencies, AMPAC, Vital Statistics, Advice on Drugs and Supplies, Welfare Programs, Speeches for Clubs, Films, Scientific Research, Professional Relations, Drafting of Programs for County Medical Societies, Publicity, Office Procedures, Malpractice, and the like.

The central office has accumulated a wealth of information on these subjects and, in addition, has solicited the co-operation of allied organizations in the state in helping you with your questions. Perhaps you are in need of other information. If this be true, maybe we can help.

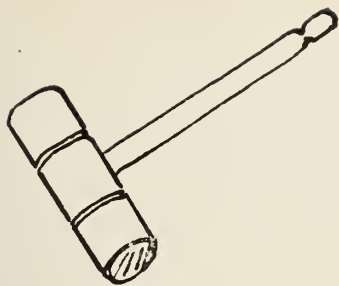
It was my thought that perhaps a better liaison program should be instituted between the state office and the practicing physician lest we become engulfed in office routine and slight the individual member. In view of this, you can render the state office a personal service by giving your thinking on ways and means of accomplishing a better relationship. How can this be done? What would you like to see done that would improve the communications between you and your Society and this office? What can be done to enhance the relationship between you and your Society and the State Board of Censors? How can your Medical Association further benefit you?

Your frank and honest opinion will be welcomed regardless of how trite or insignificant it may seem to you. If you desire, leave your reply unsigned; but please accept this as a personal invitation to voice your opinion on ways and means of improving our relationship.

With this information, a better personal service can be offered Association members. We hope to hear from you soon.

Sincerely,

W. V. Wallace



President's Page



This month brings the end of another year. A time when one usually shifts into neutral for a short time, does some reviewing of results during the current year, makes adjustments or excuses for plans unaccomplished and comes up with resolutions for the next year.

Time spent in this way brings valuable information, which when applied to one's activities during the next interim will be very profitable.

As members of a great medical organization let's not forget to add increased action to our loyalties next year. Let every member attend the annual meeting of his local medical society and participate in the electing of such officers as will add the most to the progress society wise in your community during the ensuing year. The sum total of 67 such county activities will materially stimulate your state society.

Over the period it has been my privilege and pleasure to be a member of the Medical Association of the State of Alabama, I have sat in many times at the Saturday morning business meetings, which is the last day of the annual session. The purpose of this meeting is to transact the business requiring attention at the time. This meeting is of course open to any member who may, if authorized, be permitted to appear on the floor of the convention and discuss whatever things he may desire, just so it is pertinent to the problems being considered by the days program.

The attendance at this meeting is composed primarily of counsellors and delegates together with the officers of the Association. It is the duty of these representatives to approve what has been done during the year, after proper and sufficient deliberations, vote

their convictions, and let the results become what the majority decides.

On these occasions the Secretary-Treasurer revises the various rolls, including that of membership. Not only does each member, delegate and counsellor have to be cleared and pronounced in good standing, but each county society must pass inspection and merit approval before it can continue in the good graces of organized medicine in Alabama and the nation.

I have often been amazed at how the Secretary-Treasurer, who is your elected officer, had to belabor a few fellows and county societies to get them to pay their dues on time. This is not because of a lack of desire to be an active member, but is due to a slothful habit in attention to duty on the part of the member.

On January 1 each year the membership fees are due and should be paid and sent to the secretary's office without delay. This kind of promptness will add new life to your county and state organizations. It will increase our pride in the fact that we belong to a live—wide awake medical group which stands ready to help render better service to the various segments of society. Let's mail our checks to our local treasurer soon, or better still attend our society meeting and

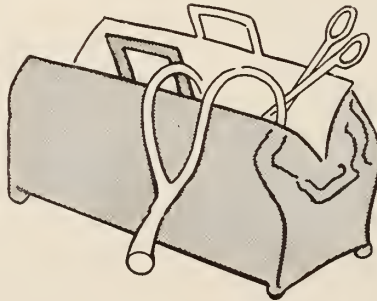
support its program with our presence and promptness in all its activities.

Be an active member and proud of it. Procrastination steals our time, inaction incites ankylosis and atrophy and rigor mortis sets in soon after death. No matter what else may engage our time let's be paid up members in our medical organization by February 1 each year and soon the fixation of a good habit will possess us and our hardworking Secretary-Treasurer will get a greater thrill out of performing his tasks. Can we do less or need we do more to express our personal appreciation for what organized medicine has and is doing for us?

Shall we enjoy the fruits of our own efforts or be displeased with how "George" did it.

Another good objective is to plan now to attend the annual meeting in Montgomery, April, 1964. By complying with these simple resolutions we shall soon feel more like we are a part of each program and this will deepen our interest and fortify us for the daily tasks as doctors of medicine whose only reason for existing is to render a service to mankind that can come from no other group.

J. S. Daves, M.D.





around the state

CONWELL NAMED EMERITUS PROFESSOR

The Orthopedic Section of the Department of Surgery announces the promotion of Dr. H. Earle Conwell from clinical associate professor to clinical associate professor emeritus of Orthopedic Surgery.

Dr. Conwell has served the Medical College of Alabama since it was moved to Birmingham in 1945.

He graduated from the University of Alabama Medical School in 1915 and interned at Hillman Hospital. Dr. Conwell is a past president of the Jefferson County Medical Society and past president of the Medical Alumni of the University of Alabama Medical College. He is co-author of a widely-used textbook, *The Management of Fractures, Dislocations and Sprains*.

Dr. S. Richardson Hill, Jr., dean of the Medical College said, "We are all aware of Dr. Conwell's great contributions to the development of the Medical College of Alabama and would like to express our admiration and gratitude for his many years of service."

ALABAMA PHYSICIANS HONORED BY AMERICAN COLLEGE OF SURGEONS

Approximately 1,050 surgeons were inducted as new Fellows of the American College of Surgeons in cap-and-gown ceremonies during the annual five-day Clinical Congress of the world's largest organization of surgeons, held in San Francisco. The American College of Surgeons, celebrating its semi-

centennial this year, is a voluntary, educational, scientific, and non-profit association of surgeons founded in 1913 for the sole purpose of improving care of the surgical patient. The College has grown in 50 years from a founding group of 450 surgeons of Canada and the United States to a total international membership of approximately 26,200 Fellows in 79 nations.

Fellowship, a degree entitling the recipient to the designation "F.A.C.S." following his name, is awarded to those surgeons who fulfill comprehensive requirements of acceptable medical education and advanced training as specialists in one or another of the branches of surgery, and who give evidence of good moral character and ethical practice.

Those receiving this distinction from the State of Alabama at the 1963 Convocation are as follows: Joseph W. Harner, Jr., Anniston; Benjamin H. Johnson, Jr., Bessemer; John M. Akin, Jr., Merrill N. Bradley, and Edward V. Z. Scott, Birmingham; William H. Cooner, William F. Everett, and Vincent P. Cappeluzzo, Maxwell Air Force Base, Montgomery; Frank I. Buckner, Jr., John C. Fridge, and Peyton R. Tunstall, Jr., Mobile.

LEE COUNTY MEDICAL SOCIETY

While we are not the largest, neither are we the smallest county medical society; we believe we can take our place along side any county society in the state, for progress and good medicine.

Two things have been outstanding since this reporter began practicing in Lee County. The

first being the completion and opening of the new \$750,000 addition to our original hospital which was opened in 1952. On October 16, 1963, the new addition added 36 beds to our facility, plus the opening of an ultra modern nursing home which is comparable with the best in the country. This brings our bed capacity to 116 and 37 in the nursing home.

The second important innovation began last year. Each year the doctors of the society will donate to what we call, The Lee County Medical Society Scholarship Fund. Although at this time the fund is small, we will have in a few years a sizable amount with which we will be able to help worthy applicants to further their studies either in medicine, nursing, laboratory techniques or other comparable phases of the medical arts.

The society sponsors a quarterly county dinner and medical meeting at which time we present "out of town" guest speakers who are outstanding in their particular field. Guests are invited who live within a radius of fifty miles. These meetings not only provide a good "social hour" but also many pearls are had from our guest speakers.

We are now in the process of sponsoring a county-wide all-out anti-polio campaign. Our first inoculations will start December 8. We have secured the whole-hearted support of the business firms in the county as well as the civic clubs, our very fine Auburn University, the newspapers, and radio. The success of our endeavors has been the close relationship of the members of the Lee County Medical Society. Y'all come, visit us.

F. Bernard Schultz, M. D.

AMERICAN SOCIETY OF ANESTHESIOLOGISTS

Dr. Robert Nelson, Jr., Tuscaloosa, Alabama served as director in the House of Delegates of the American Society of Anesthesiologists at its annual business and scientific meeting, November 2-6, at the Palmer House in Chicago.

Dr. Robert W. Grady, Fairfield, Alabama

served as a delegate, and Dr. V. N. Balovich, Mobile served as alternate delegate.

The 135-member House of Delegates is the policymaking body of the Society. While in session, the House studied ways to alleviate the critical shortage of anesthesiologists in this country and acted on recommendations made by the Society's committees, officers, and district directors.

TESTIMONIAL DINNER HONORING DR. JOHN W. SIMPSON

The Children's Hospital, Birmingham, will give a testimonial dinner honoring Dr. John W. Simpson at 6:30 P. M. on Thursday, December 12 at the Guest House. Dr. Charles A. Weymuller, Professor of Pediatrics, Emeritus, Long Island College of Medicine and New York University, will be the guest speaker.

Price of tickets is \$5 per person. Reservations may be made to the Children's Hospital, 1601 Sixth Avenue South, Birmingham, Alabama.

SOUTHEASTERN SURGICAL CONGRESS 1964 MEETING

The 1964 meeting of the Southeastern Surgical Congress will be held on the S. S. Hanseatic. The Cruise will begin March 21, sailing from Port Everglades (Fort Lauderdale), Florida, returning to the same port on March 28. Stops included will be St. Thomas, San Juan and Nassau. For further information write to the Secretary-Director, Dr. A. H. Letton, 340 Boulevard N. E., Atlanta 12, Georgia.

The Southeastern Surgical Congress has 175 members in Alabama and the Councilor in charge of the Congress' affairs is Dr. John M. Slaughter, Lloyd Noland Hospital, Fairfield, Alabama.

1964

ANNUAL SESSION

The following appointments have been made by the Montgomery County Medical Society for the 103rd Annual Session of the Medical Association of the State of Alabama, April 23-25, 1964.

General Co-Chairmen: Joseph W. Perry, Thomas H. Williams, Jr.

Hotel: Robert T. Ashurst, Chairman; A. S. Zdanis, Co-Chairman; Warren Shuman, Bruce F. Holding, Jr.

Hall—Audiovisual: W. A. Daniel, Jr., Chairman; James H. French, Co-Chairman; Mervel Parker, John M. Pickering.

Scientific Exhibits: T. Brannon Hubbard, Jr., Chairman; George B. Penton, Co-Chairman; Hugh MacGuire, Paul Lochte.

Commercial Exhibits: William B. Virgin, Chairman; S. J. Selikoff, Co-Chairman; William M. Brock, Floris M. Herbert, B. F. Dorrough, Grover C. Murchison, Robert L. Draughon.

Entertainment: John Allen Jones, Chairman; Harry J. Till, Co-Chairman; Edwin B. Kent, Ross McBryde, Hugh Praytor, E. Fred Campbell.

Finance: Nace R. Cohen, Chairman; Walker B. Sorrell, Co-Chairman; George R. Cocks, William F. Reynolds.

Hospital Visitation: William R. Britton, Chairman; Paul M. Shashy, Co-Chairman; William B. Crum, Jack Wool.

Golf: John S. Yow, Chairman; Truett Jackson, Co-Chairman; Willard Bennett, David E. Dunn, Paul S. Mertins, Karl B. Benkwith.

Publicity: William C. Waller, Chairman; Kathleen Wickman, Co-Chairman; Philip M. Lightfoot, Jr., John M. Cameron.

Transportation: Richard M. Garrett, Chairman; John W. Webb, Co-Chairman; Irl R. Long, James M. Parks.

Hospitality: A. E. Thomas, Chairman;

David B. Monsky, Co-Chairman; Haywood S. Bartlett, Thomas S. Boozer, J. Mac Barnes, John W. Davis, Jr., Harry Glazer, Dan L. Hagood, T. Brannon Hubbard, Sr., Franklin Jackson, J. Cobb Laslie, John A. Martin, Frank Riggs, Leon Rosen, C. S. Stickley, Francis M. Thigpen.

DALLAS COUNTY MEDICAL SOCIETY

Dallas County Medical Society met on November 5, 1963. Dr. Carlos Ross was appointed chairman of Operation Hometown and has appointed his committees. During the month this committee has begun work in an effort to fight the King-Anderson Bill or a similar bill.

BUTLER COUNTY MEDICAL SOCIETY

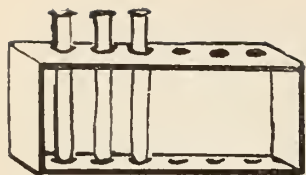
A total of 17,656 Butler countians received the Sabin Polio vaccine Sunday, November 10, 1963. There were 13 "feeding stations" in the county.

The complete immunization program calls for three visits to the clinics. The next will be scheduled in January, and the same procedure will be followed. The physicians of the county are very anxious for a complete immunization with every man, woman, and child taking the three vaccines.

The oral vaccine program is under the auspices of the Butler County Medical Society, Dr. H. Philip Speir, president.

The Pilot Club of Greenville, Miss Layne Reynolds, Coordinator, took over the task of operating the 13 stations. Assistance was received from volunteers from other civic groups. All the physicians, dentists, and nurses who were off duty, helped administer the vaccine to the more than 17,000 persons.

Those who did not receive the vaccine on November 10 were given the opportunity at a later date. It is hoped that in this manner 100 per cent inoculation in Butler County will be achieved.



STATE DEPARTMENT OF HEALTH

OPPOSING GROUPS MEET IN WASHINGTON REGARDING QUACKERY

Forest E. Ludden, M. S., M. P. H.

Director

Division of Health Education and Information

Opposing sides on the question of medical quackery held conferences in Washington, D. C., October 25-26. The Second National Congress on Medical Quackery was jointly sponsored by the Food and Drug Administration and the American Medical Association. Meeting in competition with this group was the First National Congress on Health Monopoly sponsored by the National Health Federation.

At the Second National Congress on Medical Quackery, the Honorable Anthony J. Celebrezze, Secretary of Health, Education, and Welfare, stated that medical quackery has become much more insidious than before. False cures have come to the front even though we have cures for the same diseases. Mr. Celebrezze said that health education is like a vaccine in the area against quackery. Positive health education must be used to combat so-called "health foods", doorbell "doctors", and other areas of nutritional and medical quackery.

Dr. Edward R. Annis, President of the American Medical Association, stated that the purpose of AMA is to insure people of a good quality of medicine and to protect the public from quacks. Two years ago one billion dollars were spent by the American public for nutritional quackery and fake cancer and arthritic "cures". This amount alone is more than enough money necessary to operate all medical schools in the country for two years. To eliminate this quackery, Dr. Annis

recommended health education of the public. He referred to how radio, television, and the press have put over the Sabin and Salk immunization programs and asked what value is knowledge if it is not disseminated to the public. Dr. Annis stated that krebiozen, which was thrown out by AMA in 1951, may prove to be one of the biggest frauds ever to hit this country.

According to Dr. George P. Larrick, Commissioner of the Food and Drug Administration, the best two years for FDA were those following the first conference on medical quackery. Yet quackery remains one of public health's major problems.

Medical quackery is most prevalent in the areas of fake devices, food supplements and drugs. One fake device, the spectrochrome, is used to treat the body during certain phases of the moon. Another device used to extort money from unsuspecting victims is the Microdynameter, which measures electricity in the body. It was used by health "practitioners" for diagnosing most diseases, including cancer and tuberculosis, until its distribution was stopped by court order.

The biggest racket in the health field is nutritional quackery. One "health food", nutrobiozen, was sold by 75,000 salesmen. Many other "health foods" such as concentrated ocean water and sea spray salt are likewise being used to swindle the public.

Medical quackery has thrived in the area of drugs. An example is the best-seller book *Calories Don't Count*, which was used to promote safflower oil capsules for weight reducing, lowering blood cholesterol, treating arteriosclerosis, and other purposes. The author, a physician, is likewise a stockholder in the company which distributed capsules of safflower oil.

The Honorable Sidney W. Bishop, Deputy Postmaster General, reported a 200 per cent increase of cases reported for court action against medical quackery. He stressed that aged persons are the group most vulnerable to medical quackery.

A report from the Federal Trade Commission stated that the agency cannot prevent the freedom of speech or the content of books promoting medical quackery unless these were advertising particular products. However, the Commission can and does prevent false and misleading claims of quacks in advertising their products.

The National Health Federation has as its primary objective the promotion of so-called natural or unprocessed foods. In promoting these "health foods" for personal profit the National Health Federation carries on a continuous propaganda war against all other foods which they refer to as processed or refined. The Federation contends that all diseases are due to a faulty diet. The food faddists claim that most Americans suffer from malnutrition. These diet deficiencies, they say, result from commercial food processing which destroys the nutritive value of foods, the growing of crops on soil which has been depleted of necessary minerals and vitamins, and the using of chemical fertilizers which poison the lands and the crops grown on it. The faddists have set up a list of "wonder foods" which supposedly offer the eater many and varied therapeutic and preventive advantages. However, these "wonder food" promoters point out that even these in themselves are not sufficient to provide the body's requirement of nutrients. The "wonder foods" must be supplemented by diet supplement pills and other "wonder drugs" sold by

the same faddist. This vigorous and often vicious campaign of the National Health Federation misinforms, clouds issues, and misleads consumers, legislators and their own members on where the best interest of the public lies. This campaign must be met by an equally forceful counterattack of health education to inform the public of this modern medical and nutritional quackery.

The National Health Federation contends that the individual should have the right to make his own medical decisions. Members of the organization say that the individual should have the right to go to anyone he believes to be competent for medical advice. They object strongly to the FDA and AMA decision on krebiozin as they feel this, too, should be left to the individual's choice. The National Health Federation argues that it is unconstitutional for the central government to control this freedom of choice. Is it unconstitutional for police officers to attempt to restrain a person who chooses to jump off the top of a tall building? Is it unconstitutional to prohibit persons from eating in a restaurant which does not meet minimum sanitary regulations and therefore may endanger their health? How far should this "freedom of choice" go? Why does the National Health Federation attack the government for taking away "freedom of choice" just in the area of food supplements, "wonder" drugs, and fake devices? Is it principles they are fighting for?

Much remains to be done before the problem of medical quackery can be eliminated. State legislation and enforcement in this area must be accomplished. Since the First National Congress on Medical Quackery mass media have done an outstanding job in presenting programs which depict the medical quack and how he saps the health and dollars of the individual. These efforts to educate the public about medical quackery must be continued and intensified. The American Medical Association and government regulating agencies should be commended for their continuing vigilance in combating this extremely difficult problem of medical quackery.

The Woman's Auxiliary



Dear Doctors:

We do hope you looked with interest at the membership map on this page in last month's Journal. How nice it would be to have more of those unshaded counties in the "organized Auxiliary" shading. We can think back to when our own Blount County was not an organized entity and then we try to apply the same successful tactics to presently unorganized counties. Frances Clemmons (Mrs. Lowell, of Cullman) is our membership chairman by virtue of her position as state president-elect and with her help we will do our best in this matter. An Auxiliary can help in many ways, one of which is in Operation Hometown, help with the legislative program, about which they have just now had a letter. This is a matter in which you will have to ask their help. Operation Hometown kits are available and are most informative. AMPAC is not alone in its feeling against the King-Anderson type of bill. BIPAC (Business-Industry Political Action Committee) is also on our side.

We have heard that the King-Anderson Bill is dead for this session of Congress but that because of the press of business, time between sessions may be short so we need to be ready. In the Auxiliary's state constitution seven objects are listed, the first of which is "To assist the Medical Association of the State of Alabama," an object which could be applied here on the county level.

The second object listed is "To advance the cause of preventive medicine." While this is an Auxiliary object, it brings to mind a matter which has been strangely persistent to me since I took office. Any state Auxiliary president has an Executive Board of over twenty-five committee chairmen and co-chairmen, plus the presidents of thirty organized counties. All of these become more and more familiar to her until, in my case, the maternal instinct is aroused and I feel somewhat responsible for urging prophylactic health measures upon them. Statistics of "one in nine" or "one in seven" have a disquieting effect when one is in a meeting, looking around at these special faces and wondering what health problems they will meet in the future.

The old saying has the cobbler's wife going without shoes and this is a plea for you to do all possible to see that it is not the doctor's wife who goes without early diagnostic tests. She may not know just where to go to have a Pap smear done but a little help from the real medical side of the family would be worth a lot in the case of a negative result from this or from a chest X-ray or similar tests.

The custom some medical societies have of giving each other a going-over once a year is most admirable. And a birthday check-up for the wives would put them in the class with the big executives whose companies demand this same thing.

Turning from so sober a subject we look ahead to this most blessed of seasons with the hope that the atmosphere in your black bag may somehow exude the tinkle of sleigh bells, the harmony of Christmas carols, the aroma of pine boughs, a sprig of holly, and that a blazing yule log and a big piece of mistletoe will be awaiting you on your return from that last call.

Yours,

Marlys R. Sutton

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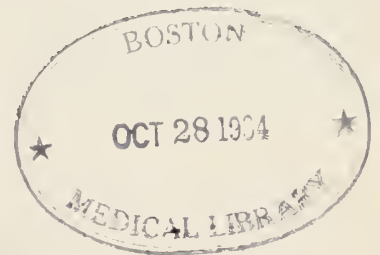
Siliconized Dacron Interposition For Traumatic Radio-Ulnar Synostosis

CASE REPORT

CHARLES F. SCHNEIDER, M. D.

and

SOLOMON LEYVA, M. D.



Cross union of the radius and ulna is mentioned in most orthopedic texts as a dreaded complication of forearm fractures, yet its treatment is usually dealt with in a cursory manner and often dismissed as being unsatisfactory. The paucity of information on this subject to be found in the published literature probably stems from the poor results obtained in attempting to improve function in synostosis. Indeed, one current text of operative orthopedics states discouragingly

that once it occurs eradication is considered improbable.¹

The pathogenesis of heterotopic osseous tissue formation is not always perfectly understood but is thought in most instances to be the combined result of periosteal displacement and the presence of hematoma. As in callus about a fractured bone, osteoid trabecula formed by the osteogenic tissue appear in the organized fibrous tissue to form a bony mass, which if extensive enough can cement itself to the contacted adjacent bone. For this reason synostosis is more often seen following fractures of the proximal end of the forearm and in angulated fractures where the two bones are in greater proximity.

Dr. Schneider, formerly chief of surgery, Hazark Memorial Hospital, Kentucky, is presently with the Jefferson Medical Group, Birmingham, Alabama.

Dr. Leyva, formerly assistant chief of orthopedics, Harlan Memorial Hospital, Kentucky, is now practicing in San Luis Potosi, Mexico.

Except for its rarity, the incidence of radio-ulnar synostosis following forearm fractures



Figure 1



Figure 2

is not known and to the author's knowledge has never been published. In a group of five hospitals in Kentucky only two cases have been encountered during the past seven years.

Preventive treatment is directed towards the proper reduction of angulated forearm fractures and thus maintaining the integrity of the interosseous space, and by removing any obvious hematoma. Brady and Jewett² have used a screw through the ulna which impinges against the radius to increase the interosseous space, as a method of avoiding a proximal synostosis.

Many procedures have been employed in an attempt to improve function once a synostosis has formed. In the proximal group these include: resection of the proximal radius with placement of fascia lata between the resected end of the radius and the shaft of the ulna; excision of the bony bridge and placement of a distraction screw;² implanta-

tion of a radial swivel below the synostosis together with restoration of supination by tendon transplant.³

Radio-ulnar synostosis distal to the pronator teres insertion has been treated with a variety of procedures. To improve a hand fixed in a poor rotational position, derotation osteotomies of both bones and ulnar resections have been advocated. For bony union at the distal radius and ulna, Darrach's ulnar resection may be used. Complete excision of the bony bridge with or without the placement of an interposing barrier such as fascia lata, gelfoam or other material, appears however to have been the more desirable procedure when applicable. Despite these measures recurrence has been common.

Case Report

On February 12, 1962 a 42-year-old man suffered slightly comminuted fractures of the



Figure 3



Figure 4

right radius and ulna approximately between the middle and distal thirds (Fig. 1), together with abrasions and contusions of the soft tissues, when his right forearm was caught and sharply angulated in a mining machine. He was treated initially by closed reduction and plaster cast immobilization. Because of the instability of the fractures it was decided that open reduction and internal fixation was indicated. Therefore, on February 19, after the soft tissues had adequately healed, this procedure was carried out. The usual posteromedial incision was used for the ulna and a Henry incision was used to approach the radius. After adequate reduction and fixation, employing an intramedullary rod for the ulna and a plate for the radius, cancellous autogenous iliac bone chips were placed over the more superficial aspects of each fracture and the wounds closed. On May 2 the plaster cast was removed and X-rays revealed progressive callous formation at the fracture

sites but also the presence of a bony bridge beginning at the ulnar fracture and crossing to the radius distal to the level of the radial fracture (Fig. 2). There was complete loss of supination and pronation. On May 15 this synostosis was excised and gelfoam placed between the two bones. Upon completion of this procedure there was approximately 45 degrees of passive pronation and supination. Postoperatively, the arm was placed in a molded plaster splint for ten days and then removed. His wound was healed but he had only ten degrees of forearm rotation. In spite of active physical therapy and return to work all rotary motion of the forearm was gradually lost. By July 25 the bony bridge had reformed to a much greater extent than previously (Fig. 3). On August 28 the synostosis was again completely excised. A piece of siliconized dacron mesh* 0.007 inches in

*Research product of Dow Corning Company.

thickness, four inches in length and one and one-half inches wide was placed about the opposing surface of the radius and held in place with a single circumferential loop of fine multifilament steel wire. At the same time the intramedullary rod was removed from the healed ulna. Thereafter, the patient was immediately started on active exercises followed by physical therapy. Following full wound healing he was returned to work. Initially he had only 40 degrees rotation of the forearm but gradually recovered approximately 80 per cent of pronation and supination as compared to his normal forearm. X-rays nine months later (Fig. 4) showed no reformation of the synostosis and the patient was carrying out his occupation as heavy equipment mechanic without difficulty.

Comment

Because silicone is almost completely without tissue reaction and dacron does not frag-

ment as do metallic meshes, this material seemed ideal for implantation.

Summary

A case of post-traumatic radio-ulnar synostosis is presented which demonstrates a recurrence after the first surgical excision but a good functional outcome and no recurrence after subsequent excision and interposition of a siliconized dacron mesh.

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SEALE HARRIS—Physician-Scientist-Author

EMMETT B. CARMICHAEL

University of Alabama Medical Center, Birmingham, Alabama

The subject of this paper shall be remembered as long as we have organized medicine for his recognition and description of the clinical syndrome, hyperinsulinism.

Dr. Seale Harris was the sixth of ten children by Charles Hooks and Margaret Ann (Monk) Harris. Seale was the fourth son. His great grandfather, William Harris, moved from New Bern, North Carolina to Hancock County, Georgia, where he married Sarah Coffee in 1803. Their son, Peter Coffee Harris, was born on May 21, 1807. Peter Coffee

attended the University of Georgia for two years. When he was 20 years old, he married Narcissa Ann Hooks, the daughter of Charles Hooks who had been a member of Congress from North Carolina before he moved to a plantation near Montgomery, Alabama, where the marriage of his daughter took place.

William Harris and his family moved from Georgia to the Mississippi Territory in 1817 and cleared the land and built his home on the plantation that contained the springs near Montgomery now known as Pickett Springs. The Charles Hooks family settled on a plantation near there in 1826, seven years after Alabama was admitted to the Union. Four

Dr. Carmichael is assistant dean, Medical College of Alabama and School of Dentistry.

children were born to the union of Peter Coffee and Narcissa Ann (Hooks) Harris: Sarah, William, Charles Hooks, and Peter.

Charles Hooks Harris, the father of Seale Harris, our subject, was born on February 22, 1835 at Tuskegee, Alabama. Charles Hooks attended school at Tuskegee and spent some time at a preparatory school at Chunnenuggee Ridge where he studied both Latin and Greek. His stay at the academy was cut short due to a fight with his roommate following some insulting language by the latter. Charles was suspended for breaking the good order of the school. Charles entered the University of Alabama in 1853 and by his own account of his career, shows it to have been marred by excess merrymaking and practical jokes which the professors thought beyond the limit of tolerance. The incidents which led to his withdrawal from the University are known as the "Doby Rebellion." Young Doby was disciplined by the faculty wrongfully, so the students thought and the sophomore class declared that it would leave the University if Doby was not reinstated. The faculty declined to do this and more than forty boys left at once. Charles Hooks Harris was one of them and it was his second departure from an educational institution under somewhat bemuddled circumstances.

No doubt the second episode with education resulted in some serious thought by Charles so he decided to study medicine with Dr. Egbert Johnson of Tuskegee. In the fall of 1855, the year that J. Marion Sims founded the first hospital solely for the treatment of women in New York City, Charles entered the School of Medicine, New York University and he graduated *summa cum laude* in 1857. His older brother, William, had graduated at that institution in 1853.

Charles received a certificate of special proficiency and was appointed assistant demonstrator of anatomy for Dr. Philip Augustus Aylett. He received the M. D. degree in April 1857 and married Margaret Ann Monk, of Magnolia, North Carolina, his fourth cousin, on June 18 of the same year. Margaret had

received her diploma from Clinton Female College.

Dr. Charles Hooks Harris opened his office for general practice in Magnolia, North Carolina and after three years decided to move to Montgomery, Alabama, one of the most prosperous of the Southern cities. He had just purchased a home and planned to establish his practice in Montgomery when secession seized the South in its fell clutch. He entered the Confederate Army as assistant surgeon to a North Carolina regiment. Later on he was Captain Charles Hooks Harris, Field and staff surgeon, 60th Virginia Infantry of the Confederate States Army. He was taken prisoner in 1864. In February, 1865, Charles was paroled and he returned to Montgomery where his wife and three children were living.

With the war over, Dr. Charles rented land, made a crop and disposed of it in the early autumn. Then he and his family, along with his wife's parents, moved to Kingston, Georgia, where he rented a farm on the Etowah River. There his fourth child, Peter Charles, was born on November 10, 1865. All of the family's ex-slaves went with him to help on the farm which was near the home of his younger brother, Peter.

The necessity of a larger income than he could obtain from his practice and the farm led Charles Hooks Harris to move to Cedartown, Georgia, a village of five hundred souls, on Christmas eve, 1866. He began visiting the sick on January 1, 1867 and continued to practice there for the next 30 years.

Six of the Charles Hooks Harris' children were born in Cedartown. The subject of this paper was born on March 13, 1870.

Seale Harris attended a school in Cedartown which was run by his brother, James Coffee Harris. He came through childhood without any untoward incidents of note. As a young boy, he frequently drove his father into the country to see patients. The home of Dr. Charles Hooks Harris was devoted to the rearing of the ten children born to him, nine of whom lived to maturity. There were

five boys and five girls. It was a home in which there was almost complete freedom of the individual to express himself in the lines of his choice, provided only that he hurt no one else. The Harris home in Cedartown kept open house for their friends every day in the year, and each child was privileged to bring a guest at any hour of the day or night without asking permission from anyone. The golden rule was the law in the Harris home and though never far removed from poverty, no needy man or woman was ever turned away without having been given food or clothing or both.

When he was 19 years old, Seale Harris was a rodman with an engineers corps in South Carolina engaged in locating a part of what is now the Seaboard Air Line Railroad Company. His brother James wrote him that he, along with brothers Charles and William, would lend him money to go to the University of Georgia for academic work and then that they desired him to study medicine at the College of Physicians and Surgeons, Columbia University. Seale attended the University of Georgia in 1891-92 and cholera broke out in New York City a few weeks before he planned to leave home for that city. Although it proved to be only a small epidemic, it diverted Seale to the University of Virginia where he enrolled in 1892 and lived in the room that had been occupied by Edgar Allen Poe. He received the M. D. degree on June 13, 1894 along with 30 other students. At that time, the Medical Department requirements at Virginia were "... attended the regular course of not less than two years in this institution and passed a satisfactory examination on all subjects included in the Medical Course."

Early in the fall of 1894, Dr. Harris opened his office in Union Springs, Alabama, and he was elected reporter at the November 7th, 1894 meeting of the Bullock County Medical Society. He was elected Secretary to the Society in February, 1896 and served as its president for two years, 1900-1902. In 1904 he was elected Vice-President of the Society.

In February 1898, he was elected Health Officer of Bullock County and held that office the next seven years. He served as a member of the Board of Censors from 1897 until he tendered his resignation from the Bullock County Medical Society in January 1906 when he enrolled in a Postgraduate Course in Medicine at Johns Hopkins University. Then he sailed for Europe for further study. It is interesting to note that his experience as County Health Officer of Bullock County fitted him well for an unhappy situation that developed soon after his ship left New York City. Dr. Harris noticed that the steward who waited on his family's table had smallpox. After consultation with the ship's doctor, who had never seen a case of smallpox, Dr. Harris quarantined everyone on the North German Lloyd ship for three days. He ruled that everyone who had not been vaccinated was to be vaccinated before they could leave the ship. On discussion of the incident with the author, Dr. Harris' comment was that it was a quick way to lose friends and make enemies.

Following a year of postgraduate study, Dr. Harris moved to Mobile and was appointed to the chair of medicine in the Medical College of Alabama which became the Medical Department of the University of Alabama in 1907. He continued as professor of the Practice of Medicine and Clinical Medicine from 1906-1913. He was also physician in chief to the Mobile City Hospital for the same period.

In October, 1915, Dr. Harris moved to Birmingham and opened his office for the practice of internal medicine. His practice grew quite rapidly until 1917 when he was commissioned a Major and assigned to the staff of General William Crawford Gorgas in the Surgeon General's office where he edited *War Medicine* which was published in Paris. He served in Europe from May, 1918 to March, 1919, and was included in President Woodrow Wilson's party to Italy in January, 1919. He investigated food conditions and nutritional diseases in Italy, Austria, and Germany dur-

ing January and February, 1919. Later on he was promoted to Lt. Colonel and was a member of the Research Committee of the American Expeditionary Forces in France. He was cited by General Pershing, "for conspicuous and meritorious service" in France. Then he was assigned to the Surgeon General's office in Washington under Major General Ireland where he wrote the chapters on gastro-intestinal diseases in the Medical History of the World War. On leaving the service in 1919, he was promoted to the rank of Colonel in the Medical Reserve Corps. The American Medical Editors Association awarded Dr. Seale Harris a certificate of appreciation for faithful service on June 6, 1921.

Before Dr. Harris sailed for Europe, he spent several months in Washington. His brother, Peter Charles Harris, was the Adjutant General with the rank of Major General, and he had a chance to meet many of the high officials in the service which included Secretary of War, Newton D. Baker; Secretary of the Navy, Josephus Daniels; Surgeon General of the U. S. Public Health Service, Hugh Cummings; Rear Admiral Cary T. Grayson; and Chairman of the Medical Section of the Council of National Defense, Dr. Franklin Martin.

During Dr. Harris' assignment in Washington, he became a devoted friend of Admiral Grayson. When the Peace Conference was held in Paris, Admiral Grayson and Dr. Harris had occasion to have several visits. In fact, it was through Admiral Grayson that Dr. Harris was invited to become a member of President Wilson's party on his visit to Italy. Likewise, Admiral Grayson arranged for Dr. Harris' return from France as a member of President Wilson's party on the Steamship George Washington. Franklin D. Roosevelt, then Assistant Secretary of the Navy, was also a member of the party.

When his official duties were finished in Washington, D. C., he moved back to Birmingham. Mrs. Harris had purchased a large two-story red brick home on Highland Avenue. Dr. Harris established a nursing home on the

second floor. He opened another nursing home at Highland Avenue and 27th Street which he operated for about four years.

In 1923, he approached the G. L. Miller Corporation of Atlanta about building a hospital next to his home. Dr. Harris had sold the Southern Medical Journal to the Southern Medical Association. With this money, his home and his practice, he approached some of the local practitioners about the project. Several of them loaned him enough money for the G. L. Miller Corporation to agree to sell bonds. The 50 bed hospital, named the Gorgas Hotel Hospital, was built and opened in 1924. The hospital was a much needed facility for the local community as well as for Dr. Harris' referred patients. Approximately half of his practice came from Mississippi.

During the depression, the bonding company failed and the Elihu Root Law firm took over their interests and attempted to salvage something for the stockholders of the Gorgas Hotel Hospital. The hospital was rented by the local Baptists in 1930 and in April 1934, the Baptists purchased the hospital and red brick home for \$77,500. In the total operation, Dr. Harris lost his home and the hospital which amounted to about \$500,000. However, he had given his personal note to each of the local physicians and he paid back every cent with interest.

The Baptist organization rented the red brick home to Dr. Harris which he used as an office until 1945 when he opened the Seale Harris Clinic which was located diagonally across the street from his old home.

Dr. Harris liked people and naturally belonged to many societies and he took an active interest in them. The Southern Medical Association was founded in Chattanooga in 1906 and he served as Secretary-Treasurer from 1910 to 1921. He was President in 1922. He was President of the Medical Association of the State of Alabama 1938-39. He was president of the American Medical Editors Association in 1919. He was a fellow of the American Medical Association and frequently served as a delegate from the Alabama Medi-

cal Association to that organization. He was a member of the American College of Physicians, the American Gastro-enterological Association and the American Diabetes Association. He was the Annual Orator of the Alabama Medical Association in 1905, and was elected a Life Counsellor in 1903.

He was president of the Jefferson County Medical Society in 1925-26. A large group of members of the society presented Dr. Harris with a silver pitcher in appreciation of the work he had done for the society. It was inscribed, "To Seale Harris, President of the Jefferson County Medical Society, Courageous Defender of the Highest Ideals of his Profession."

At the Chicago meeting of the American Medical Association in 1924, Dr. Harris missed being elected president by six votes. However, Mrs. Harris was raised from 3rd Vice President to President-Elect of the Auxiliary at that meeting and served as president at the Dallas meeting in 1926.

Soon after the meeting of the American Medical Association in 1924, the United Fruit Company sponsored the International Conference on Health Problems in Tropical America at Kingston, Jamaica, July 21 to August 1. Delegates were invited to represent universities, medical societies, health organizations, and governments from about 20 countries. Dr. Seale Harris represented the Southern Medical Association and presented a paper on "The Food Factor in Pellagra." Many other recognized and renowned medical men and scientists appeared on the program such as Sir Frederick G. Banting, Aristides Agramonte, Aldo Castellani, Hideyo Noguchi, C. C. Bass, Henry Rose Carter, Richard P. Strong, Frank B. Mallory and Milton Rosenau.

While in Mobile, Dr. Harris was interested in civic activities and was an active member of the group that established the Rotary Club of Mobile, May 14, 1914. Dr. Harris served as the first president of the Rotary Club of Mobile, 1914-15.

He was a prolific writer and author. His bibliography includes more than 100 entries which dealt with a great number of diseases and conditions: malaria, typhoid fever, jaundice, pellagra, gastric and duodenal ulcers, insulin, hyperinsulinism, diabetes mellitus, pernicious anemia, vitamins and epilepsy.

Dr. Seale Harris with some associates acquired by purchase the Southern Medical Journal of Nashville and consolidated it with the Gulf States Journal of Medicine and Surgery, formerly the Mobile Medical and Surgical Journal. Dr. Harris had purchased the latter journal in February, 1909. The title of the December 1910 issue read, "The Southern Medical Journal, Journal of the Southern Medical Association." In the June 1910 issue, the editors, Dr. Harris and Dr. H. A. Moody, made an "Announcement Extraordinary." "We have reached the conclusion that the only way to be absolutely sure to admit no unworthy proprietary medicine advertisement, and that those we do admit will be precisely as advertised, is to accept as final the conclusions of the Council on Pharmacy and Chemistry established by the American Medical Association and be guided thereby . . . Therefore we make this Announcement! From this date the Gulf States Journal of Medicine and Surgery, Journal of the Southern Medical Association, will neither make nor renew a contract for advertising any proprietary medicine which is not recognized by the aforesaid Council . . . Sink or swim, survive or perish, we have planted the standard of the Journal upon the heights, and shall stand by it." In effect, the editors said that through contracts made before they acquired the journal, certain of the pages had been allowed to pass partly from the control of the editors into the hands of advertisers. The Journal enjoyed a prompt increase in subscriptions and became an accepted medium of the southern practitioners. It was such a successful venture that Dr. Harris, in 1921, sold it for \$55,000 to the Southern Medical Association.

The Gorgas Hall of Fame Committee for sponsoring Surgeon General William Craw-

ford Gorgas for the Hall of Fame for Great Americans on the campus of New York University was chairmanned by Dr. O. C. Carmichael. Dr. Seale Harris was one of the vice-presidents and the unveiling ceremonies of the bust of Gorgas took place on May 24, 1951.

He was the co-author with Seale Harris, Jr. of *Clinical Pellagra* in 1941. He was the author of *Banting's Miracle* in 1946, and *Woman's Surgeon, The Life of J. Marion Sims* in 1950. Translation rights to *Banting's Miracle* were sold in Swedish and Dutch. The *Woman's Surgeon* was dramatized in November of 1950 by the Cavalcade of America network program which used the title, "Sir Galahad in Manhattan" to tell the story of the life of Dr. J. Marion Sims. The cast included Helen Claire, Palmer Ward, and Ray Milland who played the title role, that of Dr. Sims.

Dr. Harris became so interested in political matters that he wrote a book called, "Death of National Democratic Party—The Truth About Truman," in 1952.

In 1939, the Medical Association of the State of Alabama presented a citation to Dr. Harris which read as follows:

"In recognition of outstanding professional attainments and original research, of benefit to mankind, in first recognizing and describing a new disease entity, hyperinsulinism, this Association awards to Seale Harris, Sr., M. D. this citation as an expression of appreciation and esteem."

At the Atlantic City meeting of the American Medical Association on June 6, 1949, the House of Delegates selected Dr. Seale Harris as the Medical Man of the Year and awarded him the Distinguished Service Medal of the American Medical Association for his discovery of hyperinsulinism. His original paper on this syndrome, "Hyperinsulinism and Dysinsulinism" appeared in 1924. Dr. Harris was the second southern physician to receive the award. Dr. Rudolph Matas of New Orleans received the award in 1938. The award to

Dr. Harris was the 11th award of the medal. Previous recipients of the medal in addition to Dr. Matas were James Bryan Herrick, Chevalier Jackson, James Ewing, Ludwig Hektoen, Elliott P. Joslin, George Dock, George R. Minot, Anton J. Carlson, Henry A. Christian, and Isaac Arthur Abt.

The Southern Medical Association awarded its Research Medal to Dr. Seale Harris at the 43rd annual meeting of the Association, in November 1949, at Cincinnati, Ohio. Dr. Harris was unable to be present at the meeting due to a fall down a flight of steps which resulted in fractures of his right arm and pelvis. Dr. Harris sat in a wheelchair on November 27, 1949 and received the award from the presentation committee: Tom D. Spies, Wilbur M. Salter, and W. H. Anderson. Dr. Harris attended the Golden Anniversary Celebration of the Southern Medical Association in Chattanooga, October, 1956, where he received a gold key evidencing his long and active interest in the association.

The Mississippi Medical Association presented Dr. Harris with the 50-Year Club Certificate and button for "half century of achievement that never lost the heart and soul of medicine." The presentation was made in Birmingham on June 26, 1949. He had received the Certificate of Distinction, Fifty Years in Practice of Medicine in Alabama on April 16, 1948 from the Medical Association of the State of Alabama. The Alumni Association of the University of Virginia voted Seale Harris, 1894 M. D. a member of the Thomas Jefferson Society of Patriarchs for more than 50 years of service, June 10, 1950.

In November, 1948, Alabama doctors presented an oil portrait of Dr. Harris to the Medical College of Alabama. The presentation was made by Dr. Lon Grove, a former student of Dr. Harris when he was professor of medicine at Mobile. Dean Roy R. Kracke accepted the portrait for the Medical College.

The University of Alabama conferred the LL. D. degree on Dr. Harris in 1950. He was a member of Alpha Epsilon Delta, honorary

premedical society as well as Sigma Xi, the honorary scientific society. He was a member of Sigma Alpha Epsilon and Phi Chi fraternities.

The name of Seale Harris will be perpetuated for many years to come not only because of the Seale Harris Clinic but because his name is identified with two other singular activities.

At the suggestion of Dr. Samuel Eichold of Mobile, a camp for juvenile diabetics was established near Citronelle, Alabama. Subsequently, the Diabetic Clinic, Mobile, Inc. assumed the operation of the camp and it was named Camp Seale Harris. The camp is operated for a period of two weeks each summer for both boys and girls, eight to 14 years of age. The camp has been in operation since 1947 and has a teaching program for the entire junior class of the Mobile Infirmary and the Mobile General Hospital Schools of Nursing; the Providence Hospital School of Medical Technology; Extern training for student dieticians and for practicing physician postgraduate training under the sponsorship of the Alabama Diabetes Association.

In 1958, the Southern Medical Association created the Seale Harris Medal and the following statement appears in the By-laws of that organization: "There shall be a Seale Harris Medal which may be awarded to some member of the Association as recognition for important research accomplishment in the broad field of metabolism, endocrinology, nutrition, or for research which contributes to a better understanding of the chemical changes occurring in disease."

In 1897, Dr. Harris married Miss Stella Rainer of Union Springs, Alabama. They had two children, Josephine (Mrs. John Keegan), and Seale, Jr. Mrs. Harris died May 10, 1949. Seale, Jr., a major in the Medical Corps, U. S. Army died in Brisbane, Australia on December 22, 1943. Dr. Harris died on March 16, 1957, three days after his 87th birthday. He had been a semi-invalid for about three years following a stroke. He had another stroke two days before his death.

Alabama and the medical profession lost a great and sincere physician.

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THE RED EYE AND ITS TREATMENT WITH ANTIBIOTIC-STEROID COMBINATIONS*

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Antibiotics and steroids are valuable therapeutic agents in the field of ophthalmology just as in other fields of medicine. However, the indiscriminate and widespread use of antibiotic-steroid combinations has during recent years unnecessarily created a large number of severe eye complications. It seems appropriate to enumerate briefly the most common conditions causing a "red eye" and to discuss the treatment.

- I. Bacterial infections:
Bacterial conjunctivitis, keratitis, blepharitis, and endophthalmitis
- II. Viral infections:
Viral conjunctivitis and keratitis
- III. Fungal infections:
Of the conjunctiva, cornea, and lacrimal system
- IV. Allergic conditions:
Vernal conjunctivitis, phlyctenular conjunctivitis, and conjunctivitis associated with hay fever

V. Others:

- a. Acute glaucoma
- b. Conjunctivitis due to Stevens-Johnson's, Reiter's, and Sjogren's syndrome; pemphigus vulgaris; and other diseases of the skin and mucous membrane of unknown etiology
- c. Iritis, cyclitis, episcleritis, and scleritis
- d. Trauma and foreign bodies
- e. Deformities and inflammations of the lids
- f. Venous engorgement (carotid cavernous sinus fistula, extreme exophthalmus, et al.)

I. Bacterial infections

These should be treated with the appropriate antibiotic or chemo-therapeutic agent. The addition of a steroid might lead to a deceptive decrease of inflammatory symptoms while destruction of the corneal stroma progresses. Corneal ulcers and endophthalmitis

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(usually following injury or surgery) are ophthalmological emergencies.

II. Viral infections

These are to be divided into two groups:

The first group is caused by the large viruses of the lymphogranuloma-psittacosis group. They include trachoma and inclusion blennorrhea (viral ophthalmia neonatorum). They respond well to treatment with tetracycline and sulfonamides.

The second group is caused by the smaller viruses not affected by antibiotics. Herpes simplex virus is the most common cause of corneal infection in the United States. Herpes simplex keratitis is also the most commonly misdiagnosed and mismanaged eye infection. Therefore, a more detailed description of symptoms and treatment follows. The typical lesion is a small, superficial dendritic defect of the corneal epithelium which may hardly be visible with the unaided eye. Staining with fluorescein makes the ulceration visible. The patient usually complains of mild irritation and photophobia. A history of recent fever or upper respiratory infection with cold sores of the face can often but not always be elicited. After the disease is present for several days, a relative decrease of corneal sensitivity ensues. Atypical cases do occur. No specific treatment except cauterization and removal of the epithelium containing the virus was available until very recently. Antibiotics are of value only insofar as they prevent secondary bacterial infections. Cortico-steroids are absolutely contraindicated. When herpetic ulcer is diagnosed early and treated promptly, the prognosis is good although recurrences are common. If, however, treatment is delayed or topical or systemic steroids are given, the disease almost always spreads to the corneal stroma causing scarring and sometimes perforation of the cornea. The statistics show a startling increase of corneal perforations and severe corneal scarring following dendritic keratitis since the advent of topical steroids. To put it bluntly, the mis-use of cortico-

steroids in herpes simplex keratitis is a major cause of partial blindness. The addition of antibiotics to the steroid has no beneficial influence. Very recently, 5-Iodo-2-desoxyuridine, an antimetabolite inhibiting the synthesis of normal DNA has shown promising results in the treatment of early cases of superficial dendritic keratitis.

Another common viral infection of the conjunctiva is caused by APC virus 3 and 8. It is self-limited and does not cause permanent damage to the eye.

There is a multitude of other viral infections which are either very rare or harmless.

III. Fungal infections

Mycotic infections of the conjunctiva and cornea were rare before the advent of steroids. Now they are encountered frequently following ocular injury and prolonged treatment with antibiotics and steroids. Any torpid corneal ulcer should arouse the suspicion of fungal etiology.

IV. The allergic conditions

Vernal conjunctivitis is characterized by mild photophobia, itching, and papillary hypertrophy of the conjunctiva. Phlyctenular keratoconjunctivitis is an allergic reaction of the bulbar conjunctiva with marked photophobia, lacrimation, and formation of follicles along the limbus. The conjunctivitis associated with hay fever shows itself often as a mild hyperemia of the conjunctiva with lacrimation and itching.

These three allergic manifestations are true indications for treatment with cortico-steroids. The result of such treatment is usually spectacular.

V. Others

Acute glaucoma is fortunately not a common occurrence and is one of the very few non-traumatic ocular emergencies. The symptoms are vague pain, redness of the eye,

a hazy cornea, and a fixed semi-dilated pupil. Nausea does occur. Treatment with Diamox® and pilocarpine should be started immediately if no ophthalmologist is available, since a few hours can make the difference between normal sight and complete blindness. Of ten cases first seen by a non-ophthalmologist, nine are diagnosed as conjunctivitis, iritis, "pink eye," etc., and are usually improperly treated with antibiotics and steroids. In acute glaucoma the eye is rock-hard and simple palpation should allow the diagnosis.

There is mounting evidence that prolonged topical administration of steroids to the eye can cause chronic open angle glaucoma in predisposed persons.

The diagnosis of conjunctivitis due to Stevens-Johnson's and Reiter's syndromes depends on the recognition of the underlying systemic disease. Sjogren's syndrome presents itself as dryness of the mucous membranes, especially the conjunctiva, combined with chronic polyarthritis commencing in women at the time of the climacterium. Pemphigus vulgaris can have as its only manifestation a chronic conjunctivitis leading to gradual obliteration of the conjunctival sac. Systemic and local steroids are beneficial in erythema multiforme and pemphigus. Artificial tears help prevent complications of the keratitis sicca in Sjogren's syndrome. Iritis and cyclitis are often difficult to diagnose and an ophthalmologist frequently cannot make the diagnosis without slit lamp microscopy. The clinical symptoms consist of circumlimbal redness, photophobia, and sometimes pain. The iris pattern might be murky. After the disease has been present for some time, adhesions of the iris to the lens may distort the pupil. Pupillary dilatation and cortico-steroids are the main-stay of treatment. The latter is also true for most kinds of scleritis and episcleritis.

A small foreign body under the upper lid or embedded in the cornea, as well as barely

visible abrasions of the corneal epithelium are frequently overlooked as a cause of red eye. Prophylactic treatment with antibiotics is wise. Treatment with steroids is contraindicated.

Lid deformities and inflammations are usually obvious.

Passive venous engorgement is normally combined with other symptoms.

Summary:

After a review of these causes of "red eyes," one finds little indication for the combined use of the antibiotics and steroids while there are many dangers. On the other hand, one observes that the commercially available mixed preparations have almost eliminated the simple non-combined antibiotic or steroid preparations from the market. For this, there are several reasons. One is the feeling of the physician not sure of his diagnosis that he covers himself in all directions and does no harm if he uses such a combination. As shown above, this is a dangerous and frequently disastrous self-deception. The Food and Drug Administration recently ordered all manufacturers of topical steroid containing preparations to list the contraindications in their descriptive label. There is also a startling price difference between simple antibiotic preparations and those containing steroids. The implication that this combination takes care of the germs and the inflammation at the same time is false and dangerous.

Conclusions:

1. Absence of a positive indication is a contraindication to the use of steroid preparations in the treatment of eye diseases.
2. A "red eye" or "sore eye" is no indication (more often a contraindication) to the use of steroid containing drugs.

OSTEOGENIC SARCOMA AND PREGNANCY

A CASE REPORT

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Osteogenic sarcoma, more simply osteosarcoma, may be defined as a specialized connective tissue sarcoma which forms neoplastic osteoid and osseous tissue in the course of its evolution.¹ It is a relatively rare disease, but it is the most common of the primary malignant tumors of bone.² The incidence in Great Britain has been reported as being one per 75,000 population.³ Males are predilected over females by a proportion of two to one. About 75 per cent of the cases occur between the ages of ten and 25. Of the remaining 25 per cent, some cases occur below the age of ten but most are between the ages of 26 and 40.² Thus, the disease can occur at any age but has a predilection for the second and third decades. Osteogenic sarcoma arises in the metaphyses of bones. The lower femur and upper tibia are the most common sites of origin.³ The histological picture of this tumor is quite varied from pa-

tient to patient and even between different sections taken from the same tumor. The tumor cells are osteoblasts and may appear as spindle cells, polyhedral cells or giant cells. The intercellular substance is also variable and may or may not contain tumor bone. The degree of vascularity may be quite advanced, and occasionally tumor cells may form the actual walls of the blood sinuses.¹

Prognosis is very poor, with the majority of patients dying within a year after the onset of symptoms and most of the remaining dying shortly after two years. There is an occasional long survival. Two of these cases were reported by Sherman and Irani.⁴ One of these patients, an 18 year old colored female, had a mid-thigh amputation for osteogenic sarcoma of the right fibula. Subsequent to the surgery, the patient has married and given birth to two normal children.⁴

Since osteogenic sarcoma is a relatively rare disease, one would expect the concomitant occurrence of this disease and pregnancy to be unusual. A review of the available English literature of the last decade reveals no reports of osteogenic sarcoma and pregnancy occurring together. Though such a situation is unusual, it is obvious that when

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The views expressed herein are those of the author and do not necessarily reflect the views of the U. S. Air Force or the Department of Defense.

it appears, a very serious problem would be present.

CASE REPORT

M. B., a 34 year old colored female, was seen as a new obstetrical patient in the outpatient clinic on November 7, 1961. She was gravida 12, para 8, abortion 3, at that time. Her first four pregnancies were terminated at home but the last seven pregnancies were followed in this clinic and hospital. Obesity, excessive weight gain, cystitis, and a urethral stricture were persistent problems with each pregnancy handled here.

The patient's last menstrual period was June 17, 1961. The expected date of confinement for this pregnancy was calculated to be March 24, 1962. Physical examination revealed a height of five feet ten inches and weight of 258 pounds. Her non-pregnant weight was reported as being 250 pounds. Blood pressure was 154/70. There was an ejection murmur over the precordium and a split second sound at the apex. The fundus of uterus extended 19 centimeters above the symphysis pubis. Pelvic examination revealed a relaxed vaginal outlet, a soft blue cervix, white vaginal discharge and uterine enlargement consistent with second trimester pregnancy. Extremities were normal at the time of the first prenatal examination. Laboratory studies were as follows: hemoglobin 10.8 gms., Rh factor positive, urine negative and blood VDRL negative. In addition to the usual instructions the necessity for weight control was stressed with this patient at the time of her first prenatal visit.

One week later, November 14th, examination revealed her blood pressure to be 120/70 and weight to be 256 pounds. Four weeks later, December 14th, her weight was 248 pounds. Fetal heart tones were heard for the first time and were in the left lower quadrant of the abdomen. The exact date of quickening could not be recalled. She now complained with daily nausea and vomiting. An anti-emetic (Torecan®) was prescribed.

Four weeks later, January 18th, her blood pressure was 130/80 and weight was 245 pounds. She complained of frequency, dysuria and right flank pain. A voided urine specimen revealed 4+ albumin, numerous pus cells and 10 to 15 red blood cells per high powered field. She was instructed to force fluids and Sulfose® tablets were prescribed.

Twelve days later, January 30th, her blood pressure had risen to 150/70 and her weight was 251 pounds, a gain of six pounds. She had no edema, but she was admitted to the hospital for treatment of toxemia. Treatment in the hospital consisted of a low calorie diet, anti-hypertensive (Serpasil®) medication and a diuretic (Hydrodiuril®). Her response to therapy was dramatic. On February 3rd her weight was down to 238 pounds, a loss of 13 pounds. Her blood pressure was 126/64. She was discharged on this date and instructed to continue diet and the diuretic at home and to return to prenatal clinic for follow-up in one week.

She failed to return until February 21st, 18 days from date of discharge from the hospital. Her weight was 235 pounds and blood pressure 124/62. The height of the fundus of uterus above the symphysis was 30 centimeters. Fetal heart tones were good in the left lower quadrant of the abdomen. She complained for the first time with a painful swollen right knee. She denied any injury. Upon questioning she stated she first began to notice some pain in right knee about six weeks earlier. She had not mentioned it before as she thought it would not amount to any thing. It now hurt day and night.

Examination revealed marked, diffuse swelling of the right leg above the knee. The knee joint was mobile and did not seem to be involved in the process. The involved area of the leg was hot to the touch and acutely tender to palpation. Orthopedic consultation was obtained.

X-rays of the involved leg were made and were reported as follows: "There is irregularity of the cortical margin of the anterior aspect of the distal shaft of the femur with

apparent poorly circumscribed areas of new bone formation arising from the cortex in this region. There is slight periosteal new bone formation along the medial and lateral aspect of the distal portion of the shaft of the femur. There is fullness in the suprapatella recess somewhat more suggestive of a soft tissue mass than of effusion in the joint. There is moderate demineralization of the patella with bony spurring on the posterior superior margin. There is slight bony spurring on the articular margins of the femur and tibia. The articular surfaces appear smooth and intact. The joint space is normal in width. The findings suggest the possibility of osteogenic sarcoma."

She was admitted to the hospital on the orthopedic service for evaluation and tissue diagnosis. A chest X-ray on February 22nd was reported as follows: "There are multiple circumscribed ovoid, nodular densities scattered in both lung fields. These vary from approximately one centimeter up to three centimeters in diameter and have the appearance of metastatic neoplasm. There are also multiple small ovoid, calcified nodules scattered in both lung fields. The heart and bony thorax appear normal." A second strength tuberculin skin test was negative.

On February 26th a surgical biopsy of the tumor mass in right lower thigh was performed under general anesthesia. The pathological report on the tissue obtained was as follows: "Highly cellular osteogenic sarcoma from the lower end of the right femur."

The diagnosis of osteogenic sarcoma of right femur with pulmonary metastasis was established in this patient associated with a uterine pregnancy of 36 to 38 weeks duration. The fetal heart tones remained good throughout her hospital stay. Her blood pressure ranged from 130 to 140/80. Her weight dropped to 233 pounds. One pint of blood was given after a drop in hemoglobin to 8.8 gms.

The biopsy wound healed primarily. Precautions were taken to try to minimize the occurrence of a pathological fracture. She

was fitted with a pair of crutches. After she had learned to use these with reasonable safety she was discharged from the hospital March 12th. Precautions to prevent pathological fracture were emphasized to her and her family at the time of discharge from the hospital. She was instructed to return to the out-patient clinic for follow-up by the obstetrical and orthopedic departments.

Considering the presence of pulmonary metastasis and the late stage of pregnancy, no therapy was advised or given to the primary tumor or to the pulmonary metastases. The plan was to allow the pregnancy to proceed to term and induce labor if she had not gone into labor spontaneously by the EDC of March 24th.

She returned to the emergency clinic three days later, March 15th, because of fever, severe dyspnea and cough productive of large amounts of foamy white sputum. Respiratory rate was 44 per minute, temperature 100 degrees, and wet rales were present bilaterally. She was readmitted to the hospital for treatment.

On this admission the blood pressure was 150/80, respirations 36 per minute and pulse was 98. Catheterized urinalysis revealed 20 white blood cells per high powered field but no albumin. White blood count was 13,900 with 90 neutrophils and the hemoglobin was 11.2 gms. Pneumonia superimposed on metastatic lung disease was considered to be the immediate problem. Treatment with penicillin was begun. A sputum culture grew out diplococcus pneumoniae. On March 17th at 12 noon the patient developed acute fulminating pulmonary edema. Heroic and intensive therapy was begun immediately consisting of phlebotomy, rotating tourniquets, morphine, aminophylline and intravenous digitalis. Electrocardiogram showed a supraventricular rate of 150, probably representing a sinus tachycardia. Respirations were so labored that positive pressure oxygen was begun at the time of diagnosis. Fetal heart tones had been good during this hospitalization, but now were heard only occasionally because of the patient's sitting po-

sition and restlessness. The patient failed to respond to any of the therapy. At 8:30 P. M., eight and one-half hours after onset of acute pulmonary edema, death of the patient was imminent. The husband and family were so informed. The status of the fetus was most difficult to assess with any certainty. Fetal heart tones were in doubt at times. Immediate delivery by cesarean section was advised in the hope of saving the baby. The husband consented to emergency cesarean section. A classical cesarean section was done with local infiltration anesthesia with the patient in sitting position. A seven pound four ounce female infant was delivered at 9:55 P. M. The condition of the patient continued to deteriorate, and she expired at 10:55 P. M., one hour after delivery of the baby. Permission for autopsy was not granted.

The infant was flaccid when delivered but did gasp once spontaneously following delivery. By the time the cord was clamped and divided and the infant passed to the pediatrician in attendance, there was only a heart beat present and no evidence of respiration was exhibited. Resuscitation consisting of endotracheal intubation, suction, gastric aspiration and positive pressure oxygen were administered. The color was good the entire time but approximately forty-five minutes elapsed before the infant could carry on on her own. The fetal heart rate progressively increased during the period of resuscitation. By the time resuscitation was completed the fetal heart rate was 160 per minute. Following digitalization the rate dropped to 100 per minute.

The first ten days of life were stormy for this infant with hypertonicity exhibited continuously. Intensive antibiotic and steroid therapy was administered. Finally signs of improvement began to appear. Once improvement began to occur it was progressive. The infant was discharged from the nursery April 7th (21 days old) and weighed seven pounds 12 ounces. The infant is being followed in our pediatric clinic and appears to be developing normally in every respect thus far. She was last seen prior to the writing

of this article on July 27, 1962. At this time she had two teeth, could roll over alone and appeared alert and active.

DISCUSSION

By the time the diagnosis was established in this patient it was the opinion of all attendants that salvage of the fetus was all that could be accomplished. No therapy offered any prospect for a cure for the mother. Considering the anemia of the mother and viability of the fetus, palliative X-ray therapy was thought inadvisable. Precautions were taken to try to avoid pathological fracture occurring and none occurred.

Since the patient was well beyond the 28th week of pregnancy (the peak cardiac load) by the time the diagnosis was established without exhibiting evidence of heart failure, this complication was not seriously considered as likely to occur. More attention should have been given to this occurring for as pulmonary metastases replaced normal lung she would reach the point of insufficient functioning lung tissue to maintain compensation. In retrospect had more consideration been given to this probability occurring the activity of the patient would have been further restricted. She would have been kept in the hospital and only allowed up to a bedside commode to minimize the cardiac and pulmonary load. Thus the development of acute pulmonary edema may have been postponed.

Once acute pulmonary edema became manifest, prompt delivery of the baby should have received more serious consideration. This surely would have been in the best interest of the fetus and may have allowed the mother to temporarily improve and see her baby before death. Certainly prompt cesarean section would have accomplished all that phlebotomy did and in addition would have decompressed the abdomen at the same time. This would have lowered the diaphragm and allowed more expansion of the functioning lung tissue the patient had. The nine hours of hypoxia this fetus

was subjected to was almost more than it could tolerate. Thus far there is no gross evidence of impairment or permanent damage to the infant but it remains for time to establish whether continued growth and development will be normal. We do believe had cesarean section been delayed until the mother had expired the infant would not have left the hospital alive.

The experience with this patient is convincing to us that emergency cesarean section should be immediately considered and performed promptly when vaginal delivery is not imminent in the interest of saving a healthy, viable fetus at the onset of acute pulmonary edema or any other situation when the death of the mother is imminent provided consent can be obtained from the husband of the patient or the appropriate individual. Emptying the uterus may allow improvement or even sometimes compensation to occur in the mother and therefore be in the best interest of the mother as well as the fetus.

Happily such life threatening emergencies for both mother and fetus are extremely rare for any individual physician. Alertness, wisdom and promptness in action when they do arise appear to have a direct bearing on the outcome. This presentation is related in the

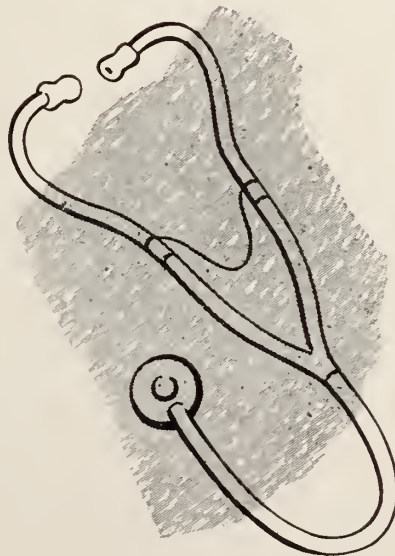
hope it will enable the attending physician to be prepared and have the wisdom to promptly intercede if and when he is faced with such an emergency.

SUMMARY

A case of osteogenic sarcoma of the femur with pulmonary metastases associated with a uterine pregnancy near term has been presented. The complication encountered in this patient and recommendations for better management of similar emergencies are presented.

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Editorials

Year in Review

Transplants Pace Medical Progress

After decades of experimentation and frustration, solid advances in the ability to provide spare parts for the human body through organ transplantation were reported during 1963.

Accomplishments in this field added up to the most exciting medical story of the year—a year which also saw:

Further indications that “ultimate weapons” against still-incurable cancer and virus diseases will be devised.

A re-orientation of the nation’s fight with mental illness.

A growing national concern about what we’re churning through our lungs.

The exposé of what may prove to be the

greatest medical hoax of the second half of the Twentieth Century.

With few exceptions, the major gains in organ transplantation were with kidneys. Kidney transplants between identical twins have been possible for the past decade. But transplants between persons genetically different, even though they might be related by birth, offered little assurance of success and were reserved as a final desperate gamble against staggering odds—until now.

The few surgeons skilled in transplants admit it is still a gamble, but the odds seem to be getting better, they report. This has been largely brought about through new methods for suppressing the immunological mechanism—the mechanism which enables our

bodies to fight off invasive bacteria and viruses.

When an organ is transplanted, the body of the recipient reacts in about the same manner as it would to germs. It creates antibodies to destroy and drive out the foreign tissue. This is not the case in transplants between identical twins, however, for then the host's body doesn't recognize anything foreign about the new part.

Early attempts to prevent rejection of transplants relied on irradiation with near lethal doses of X-rays. This killed off the defense mechanism fairly well, but it also largely destroyed the patient's ability to defend himself against ordinary germs.

Then it was found that azathioprine (Imuran®) and certain other drugs could be used to suppress, without destroying, that part of the immunological mechanism responsible for transplant rejection and still leave partially intact the body's defenses against germs.

Using this method, some pioneers in the field of kidney transplantation feel they now have a 50 per cent useful weapon against fatal, degenerative kidney disease, and expect a much higher degree of success in the future.

Moreover, the work with kidneys offers a possible springboard to the transplantation of other organs. Although there was no lasting success in attempts to transplant liver and lungs during the year, there were indications that these too may develop into effective measures.

Some researchers feel that to be really practical on a wide scale organs for transplantation should come from cadavers—persons killed in auto accidents, for instance—rather than living donors. And here, too, there was progress during the year. One patient was reported alive and well nearly a year and a half after receiving a cadaver kidney.

Meanwhile, in an allied field, surgeons were reporting some successes in maintaining life in animals by means of artificial hearts.

These "hearts" are air-powered plastic pumps small enough to implant within the chest wall. It was predicted that within a few years, a similar heart would be pumping within a human being.

Already at work are plastic valves, stitched into human hearts, and cadaver valves transplanted to living patients. Both methods demonstrated a high degree of success during the year.

At the same time replacement surgery was marking important gains, so was microbiology—the science that deals with cells, their functions and their infinitesimal components.

One major result of such work was the purification of interferon. This is a protein produced by mammal cells which imparts to the cells some protection from virus infection.

By isolating this substance, scientists now have a model which they hope can be duplicated in the laboratory. If interferon can be synthesized, it is reasoned, then it might be possible to prevent virus attacks by injecting concentrations of the anti-viral agent. This could give medicine a weapon that would prevent or halt the course of virus infections for which there are no vaccines at present.

While the possibilities of a "shotgun" approach to virus disease prevention remains for the future, two types of vaccine were licensed during the year to combat an ancient viral enemy—measles.

Both vaccines were based on the work of virologist John F. Enders, who was presented the American Medical Association's Scientific Achievement Award for outstanding contributions to medicine by a non-physician.

Meanwhile, evidence continued to accumulate that viruses and cancer may have a connection. Although no virus has as yet been found that causes human cancer, several are known which induce cancer in laboratory animals.

Findings such as these stimulated the organization during 1963 of a wide-scale effort to look for human cancer viruses. If they do

actually exist, then it might be possible to develop anti-cancer vaccine.

Another hopeful line of cancer research was the discovery that retine (like interferon a product of mammal cells) may have the ability to retard the growth of cancer tumors when supplied in heavy doses. Experiments with mice seemed to confirm this fact.

On the debit side, lung disease was on the increase during the year, including lung cancer and emphysema. The reasons were not firmly defined, but the two principle suspects, air pollution and smoking, were under close study.

Congress concluded hearings on seven bills aimed at control of inter-state air pollution problems, and several states as well as most major industrial cities, renewed action toward further reducing contamination wafted into the atmosphere.

At the same time, the Public Health Service was trying to wring conclusions from studies of the effects of smoking on health. A panel of scientists and physicians was set up by the PHS to review the evidence. In other areas of health, Congress approved measures providing matching grants for the construction and expansion of community mental health facilities and research centers.

The legislation was an outgrowth of a new approach to the nation's mental health problems—one based on care in the community rather than in centralized institutions.

Behind this change, first urged by the AMA's Council on Mental Health, was the discovery that with new drugs and new forms of therapy, the mentally ill and retarded respond best when care is carried out in the familiar community environment close to the patient's home.

Another piece of medical legislation provided for government grants for medical school construction and federal loans to medical students.

Also offered were several bills that would provide partial hospital care for the aged by

increasing social security taxes. These measures closely resembled one defeated in the Senate in 1962, and no congressional action was expected until 1964 at the earliest.

By far the biggest "medical" headlines of the year weren't about legislation, scientific breakthroughs or, strictly speaking, medicine at all. They dealt with krebiozen.

Despite evidence to the contrary reported as far back as 1951 by the AMA, the makers of this substance have continued to offer it as a cure for cancer. Not until this year, however, was the substance made available for analysis by the Food and Drug Administration.

The analysis, says the FDA, turned up "unimpeachable" evidence that krebiozen is creatine, an ordinary body chemical known to be of no use in cancer treatment. Armed with this data and a study of case histories, the agency moved toward possible prosecution of krebiozen's developers.

While the FDA was cracking down on krebiozen, drug manufacturers charged that increasingly rigid government regulations were also cracking down unnecessarily on legitimate drug research.

The stringent rules on research, following on the heels of last year's Thalidomide[®] episode, helped mark 1963 as the low-point of the last 20 years in the introduction of new drugs. Also contributing to the slowdown in drug progress, manufacturers claimed, was the fact that the remaining key diseases are not well enough understood.

The year was not without drug progress, however. A new pain relieving drug, Pentazocine[®], as potent as morphine but non-addicting, was in the final stages of clinical research, and a new anti-leukemia drug, Vincristine, was introduced. Also developed was a technique for the synthesis of steroids. This could mean that hormone-like drugs could be tailor-made to fit specific situations. Using this new technique, a tissue-building substance and an oral contraceptive have already been manufactured in the laboratory.

TO REFILL OR NOT TO REFILL

The complexity and potentiality for both good and harm inherent in today's modern therapeutic agents demand that proper control over the use of drugs be exercised. Years ago when the therapeutic agents played a much lesser role in patient treatment, the matter of refilling prescriptions developed into a relatively regular pattern. Today, however, a much greater degree of responsibility must reside with both the physician and the pharmacist in order that the patient's best interest is served. The unlimited dosing with medication by the patient can produce irreparable harm. And long term toxicity with many of our newer medications is not uncommon.

In addition to the professional responsibility which is involved with the refilling of prescriptions, there is a legal requirement which is imposed upon the pharmacist. The Federal Food, Drug and Cosmetic Act specifically states that a drug bearing the legend "Caution—Federal Law Prohibits Dispensing without Prescription" cannot be dispensed unless with the specific authorization of the physician. Since the original medication prescribed by the physician reflects the result of his diagnosis and considered opinion as to the patient's needs, it follows that he should be knowledgeable with respect to the amount and length of time that such medication is to be utilized by the patient. The drugs covered by such legal requirement include almost all of those commonly prescribed from digitoxin to Phenurone, including the antibiotics, the thiazides and all of the newer therapeutic agents.

Thus, it is obvious that a burden is placed on both physician and pharmacist to see to it that the patient's legitimate medication requirements are met with minimum inconvenience to all concerned and a proper appreciation and respect for the physician's

treatment engendered in the mind of the patient. There are two common ways in which renewals of prescriptions can be handled. The first of these is by the physician specifically indicating on his original prescription, his refill instructions. These include the authorization of a fixed number of renewals or an indication that no renewals of the prescription should be made by the pharmacist. Such instructions will insure that the physician's desires are followed and the patient will receive the medication without interruption. Should the physician fail to make any notation, the pharmacist is placed in a difficult position when faced with the patient who seeks to have a prescription renewed.

In this case, the pharmacist must resort to the second alternative and call the physician for his oral authorization to renew the prescription. Many physicians have become somewhat disturbed by the increasing number of telephone calls that they are receiving from pharmacists and on occasion have even refused to acknowledge or return such calls. This is a practice which is most reprehensible. This is not a procedure which the pharmacist relishes, but the patient's best interest and the law require that the physician be completely informed as to the medication being taken by his patients.

In addition, there is the problem of professional liability. Court cases have been decided in favor of patients when the proper care and procedures were not followed by physician or pharmacist. The failure of the physician to specify renewal instructions can cause patient dissatisfaction and create a situation which will alienate persons from the health professions.

A practice has developed in some areas whereby physicians are limiting the hours when they will accept calls from pharmacists and unfortunately the patients are not aware of this and cannot understand why they are denied their medication when they request it. Such a procedure is a severe handicap in view of the fact that the patient's needs and requests frequently cannot be anticipated and scheduled into a time period which has been

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arbitrarily proclaimed acceptable to the prescriber. Resentment develops and the patients question whether the health professions are genuinely concerned about them. Frequently the physician, when confronted by the patient, can save a great deal of the patient's time by calling the pharmacist rather than waiting for the pharmacist to call him—which usually occurs at the most inopportune time.

The free practice of the health professions of this country will continue only through the conviction of the public that its best interests are being served by the methods employed. Medicine and Pharmacy working co-operatively as separate and distinct professions, yet through combined efforts and actions, can insure our system of medical care. Mutual respect, understanding and co-operation are necessary. By specifying renewal instructions on the prescription or by graciously accepting telephonic communications, the physician can avoid inconvenience to himself, his patient and the pharmacist and avoid placing the pharmacist in a compromising position. He can insure that the patient's medication needs are properly satisfied and the necessary safeguards are provided at the least possible cost. Better public and interprofessional understanding must ensue from such co-operative practice and better patient care must necessarily result.

B. S. Rogers, President-Elect
American College of Apothecaries
Jacksonville

THE MEDICAL ASSISTANT

Medical Public Relations originates in the doctor's office. No one is in a better position to spread good public relations for the profession than the Medical Assistant.

A Medical Assistant is a versatile girl who handles the office management, and simple nursing procedures, or she may be an R. N. or laboratory technician. Her duties may be varied depending on the type of office in which she is employed.

Just as the tremendous strides being made in modern health care have changed her job, so the social and economic trends have revolutionized the management of a doctor's office. An office assistant requires thorough training to handle the myriad of details brought about by the expansion of health insurance plans, public assistance programs, and business records required for tax purposes.

Give your aides the opportunity, strongly urge them to belong to the Medical Assistants' Association so that they may profit by the experience of others and of the educational programs.

NSPB POSITION STATEMENT ON SAFETY EYEWEAR FOR NON-INDUSTRIAL USE

The National Society for the Prevention of Blindness recommends that safety lenses of shatter-resistant glass or plastic be used in spectacles, especially for children; students; persons with impaired eyesight, particularly those with sight in only one eye; and by those engaging in pursuits, sports, or hobbies which involve hazards to vision.

This recommendation is based upon thousands of case histories of eyesight saved by safety lenses, and is fortified further by over a quarter-century of proved industrial usage of such lenses.

Only those safety lenses and other protective eyewear which comply with quality and performance requirements of American Standard codes Z80 (non-industrial eyewear) and Z2 (industrial eyewear) are recommended; safety lenses meeting these codes have minimum thicknesses of 2mm and 3mm respectively. All safety lenses should be mounted in sturdy, flame-resistant frames.

Safety lens spectacles provide incomparable protection for eyesight, well worth the nominal additional charge over the cost of ordinary glasses.

'LIKES MARRY LIKES' STUDY INDICATES

Likes marry likes, a study of the wives of 38 well-adjusted "normal" American men indicated.

Individuals who are essentially mentally healthy select mentally healthy spouses, Jules S. Golden, M. D., Reuben J. Silver, Ph. D., and Nathan Mandel, Ph. D., Albany, N. Y., concluded from the study reported in the current (December) *Archives of General Psychiatry*, published by the American Medical Association.

The well-adjusted men were drawn from nearly 2,000 boys who obtained a "perfectly normal" score on a psychological test, the Minnesota Multiphasic Personality Inventory, when they were in the ninth grade, the researchers said. At age 26 and 27, 50 of these men were found to be unusually well-adjusted socially and psychologically, they said. The 38 available wives of the 40 men who had married were then studied as to their sociological and psychological adaptation.

The mean profile of the wives' scores on the Personality Inventory affords an objective and highly reliable independent evaluation of their psychiatric status, the researchers said. This shows the wives to be "astonishingly normal."

"It is of particular interest . . . that the general configuration of the profile of the women is almost identical with that of their husbands."

Husbands and wives rate high in contentment with their lot in life, effectiveness, and over-all adjustment, they said. On items reflecting "richness of personality" both men and women had a low rating.

"Both men and women are seen as essentially content with their lot in life," they said. "The women have even less striving for upward social mobility than do the men. Their aspirations appear to be in keeping with what they can realistically anticipate in their lifetimes."

The general impression of the wives was that the "greatest majority are in the normal range, reasonably intelligent, middle-class and making an adequate middle-class adjustment; with some concern with appearances and 'keeping up' but essentially 'home and children' oriented," they said.

The findings are consistent with the theory that marital success and happiness are dependent upon the man and wife having a similar social background, the researchers said.

In considering the marital relationship of these couples, they said, it was found that the husbands appeared somewhat dominant in 19 marriages and were markedly domineering in four, while in nine marriages neither partner dominated and in only six, did the wives give evidence of dominance.

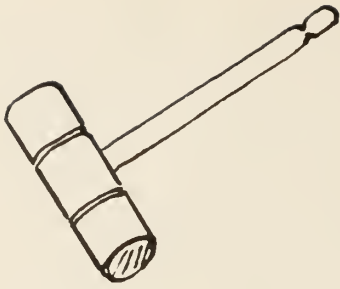
"Investigation of more representative samples would have to prove whether or not our couples are unique, or if they epitomize what may now be a relatively common level of adaptation in the population at large."

At the same time, the authors said, they had "mixed feelings" on the subject.

"Such a population would promote stability or a firm backbone of the country; but as observed of the previously described men, these couples' lives seem essentially mundane and dull."

"Our data indicates, however, that this sample of husbands and wives, with a high order of consistency, experience what we consider some of life's deepest and most meaningful pleasures: in their stable relationships with each other, and in raising their children. The inference could be made that constricted interests permit such subjects a wider opportunity for the meaningful rewards of family life.

"A more stimulating educational experience and more enlightened media of mass communication, it is our hope, will enrich such 'normal' people's lives without sacrificing their essentially sound adjustment."



President's Page



E. L. Strandell, M. D.

About the 1st of September of this year I was informed that on the 16th of September I was to be in charge of the program for the local Rotary Club. Since I had only two weeks in which to get a program ready, it was my good fortune to remember that the State Association's Committee on Public Relations had produced a film on medicine in Alabama which would run for approximately 29 minutes, use up the allotted time, and get me off the hook as far as a program was concerned. I contacted the central office, and the film was dispatched on the 16th of September and was shown to the Brewton Rotary Club. I, like the majority of the members in the State Association, had heard that

such a film had been produced and like the rest of the members had no idea of the context of the film or the impact that it would have on the viewing public.

This film entitled "Portrait of Progress," produced by the Medical Association of the State of Alabama, depicts the progress of medicine in Alabama since its admission into statehood up to the present time. It is, in my estimation, one of the best methods that has been undertaken by our Association to acquaint the general public with the progress that has been made in medicine. Last but not least this film had a terrific effect in fostering a better spirit of public relations between the general public and the State As-

sociation. To many of you it may sound strange that the Association produced a film, and ask the question as I asked, "What has this to do with medicine?"

This film was initiated by the Committee on Public Relations, sanctioned by the State Board of Censors, produced by a movie company, and is a credit to all those who had any part in its formation and completion. I urge all those who have not seen this film to make a note to try to show it at the first opportunity either at their local county medical society or to some local civic group.

Following the showing of this film the response was terrific. The consensus among most of the members of the Rotary Club was that they did not know that we had this many illustrious members who had given so much to the progress of medicine; some of these names are now commonplace in medicine. Some members did not know that one of our distinguished Alabamians, Dr. Luther Terry, was from Red Level, Alabama. Dr. Terry is now Surgeon General of the United States Public Health Service. The astonishing thing, as far as the comments of this film were concerned, was from the various members of the Rotary Club saying, "I didn't know that there was that much research going on at the University of Alabama Medical School in Birmingham." "I didn't realize that such procedures are now being done here in Alabama." "I always thought that such things took place in places like New York, Baltimore, or in the larger medical centers." It was gratifying to me to listen to some of the leading citizens compliment the State Association on this production and how much it meant to them to know that medical progress

in the State of Alabama is going forward at such a tremendous rate and is giving the general public a feeling of utmost confidence in their care here in Alabama.

This is just one example of the wonderful work that the various committees of the Association are doing. To accomplish these things means work and sometimes a lot of work by the members of the various committees of the Association.

At times a lot of help is needed in the various committee groups, not just from the members of the various committees, but from the members of the State Association itself. It seems to me that any member who has any interest at all in any of the matters being considered by any of the committees should come forth, attend the committee meeting and give the committee the benefit of his ideas on the particular subject under consideration. This is particularly true on any of the matters being studied by the committees which would have some bearing on matters to be brought up before the State Legislature.

This is an appeal for a little more co-operation from the 2300 odd members from the 67 counties in regard to the work which at the present time is being done by so few and is benefiting so many. To do this means giving what would probably amount to two hours of your time out of a busy schedule to give the various committees your ideas and true viewpoints which will help the committees in making their recommendations which will be beneficial to all.

DR. E. L. STRANDELL
Vice-President
Brewton, Alabama



around the state

Jefferson County Officers and Trustees Installed

Dr. J. G. Daves installed the 1964 officers and trustees for the Jefferson County Medical Society on January 6. The meeting was held at the University Hospital Auditorium.

A list of those installed is as follows:

OFFICERS: Dr. Hal Ferguson, Secretary-Treasurer; Dr. Charles W. Neville, Vice-President; Dr. William E. Lawrence, President-elect, and Dr. Benjamin M. Carraway, President.

MEDIATION COMMITTEE: Dr. John W. Simpson, Dr. Chestley L. Yelton.

TRUSTEES: Dr. W. Sterling Edwards, Dr. Herbert Carmichael, Dr. H. Joseph Hughes, Dr. Frank Waldo, Dr. L. R. Burroughs, Dr. Harwell Davis, Jr., Dr. William L. Hawley, Dr. Brison Robertson, Jr., and Dr. Edward Waldrop.

BOARD OF CENSORS: Dr. Edward Harris, Dr. G. J. Roscoe.

American Board of Obstetrics and Gynecology

The next scheduled examination (Part II), oral and clinical, will be conducted for all candidates at the Edgewater Beach Hotel, Chicago, Illinois, by the entire Board, April 27-May 2, 1964. Formal notice of the exact time of each candidate's examination will be sent him in advance of the examination dates.

Candidates who have participated in the Part I examination will be notified of their eligibility for the Part II examination on or before February the first.

Current Bulletins of the American Board of Obstetrics and Gynecology, outlining the requirements for application, may be obtained by writing to the Secretary. All prospective candidates are urged to review the current requirements before applying for Board examination.

Diplomates are requested to keep the Board office informed of any change in address.

J. GARBER GALBRAITH, M. D.

Dr. J. Garber Galbraith, Birmingham, Alabama, was elected First Vice-President of the Southern Medical Association at the recent annual meeting held in New Orleans, Louisiana. He assumed office on Wednesday, November 20, 1963, and will serve through the Association's annual meeting in Memphis, Tennessee, November 16-19, 1964.



Dr. W. H. Y. Smith is shown above with the D. G. Gill award given by SETWIRE.

Dr. W. H. Y. Smith, director of the State Health Department's bureau of preventable diseases, is the first recipient of SETWIRE's D. G. Gill award.

The plaque, given in memory of the late State Health Officer, was presented Friday night, December 6 at the annual meeting and 14th anniversary dinner of the Society for the Eradication of Tuberculosis in the Wiregrass (SETWIRE). Mrs. W. E. Elliott, SETWIRE executive secretary, made the presentation at the Episcopal Parish House.

About 50 volunteer TB workers from Houston, Henry, Dale, Geneva, Coffee, Pike, and Barbour Counties attended. Mrs. Joe Bass, president, was master of ceremonies.

The D. G. Gill award presented to Dr. Smith reads as follows:

The D. G. Gill Award

presented to

Dr. W. H. Y. Smith

for outstanding contribution in the fight against tuberculosis.

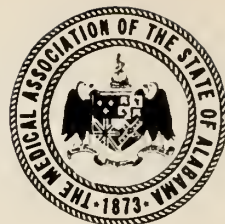
Presented by

Setwire

December 6, 1963



Alabama Department of Public Health



WHY DIE IN AN AUTOMOBILE?

The automobile is the number one killer of the American teenager. Nine hundred and fifty-two people died in motor vehicle accidents in Alabama in 1962. If the present traffic toll is not reduced, one out of every two persons faces death or injury in an automobile accident in his lifetime.

Such appalling statistics should make the the public realize the urgent need for cooperative efforts in controlling the problem of motor vehicle accidents. There is no simple solution to this problem. Motor vehicle accidents are caused by a number of factors including physical inability to drive, unsafe vehicle condition, and flaws in human judgment. Likewise a number of intermingling factors are essential in the control of this problem.

At the President's Committee for Traffic Safety workshop on high school driver education, it was contended that, from a long term medical standpoint, concentration upon persons of high school age appears to be one of the best ways of reducing motor vehicle accidents. Young drivers completing a standard driver education course have a substantially better driving record than those with-

out such instruction. Many safety experts believe that completion of a standard driver education course should be a prerequisite for all young driver's license applicants. Traffic safety is akin to health education and should be incorporated into first aid, health education, and physical education classes. Here students can learn the relationship between driving and general health, fatigue, coordination, reflex speed, and the effects of alcohol.

Presently little is known about physical or mental conditions which make a person accident-prone. Research is necessary to define the medical aspects of the problem and to help establish medically sound standards for licensure. Stricter licensure laws should be encouraged in which a driver would be required to have his driving ability tested periodically. Licensing requirements should include a knowledge of traffic laws, a behind-the-wheel demonstration of driving ability, and a statement of medical fitness by a physician.

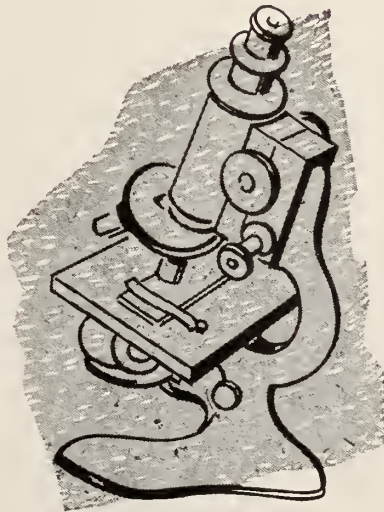
Action at the state level is necessary to establish effective motor vehicle inspection programs throughout America. More than

one-third of the states now include motor vehicle inspections as part of their traffic control and accident prevention programs. Remaining states leave it to chance that owners will maintain their vehicles in proper condition. Apathy is an enemy to public safety. Most drivers are convinced that accidents only happen to others. If we as motorists were periodically required to visit inspection stations and see potentially dangerous conditions discovered in our personal cars, we would be reminded that accidents can happen to any of us.

From the standpoint of health officials, the primary objective is to decrease the deaths from motor vehicle accidents. Seat belts offer the most practical solution to this problem by reducing injury and death. Seat belts may keep minor accidents from becoming major ones. It has been proven that the proper use of seat belts could eliminate more than 5,000 deaths, more than one-third of severe injuries, and countless minor injuries each year.

Installing seat belts in a car is not a safety measure in itself. Since more than 50 per cent of all accidents causing injury or death occur in urban areas, it is essential that seat belts be fastened every time the vehicle is used. After January 1, the 1964 automobiles will come equipped with seat belts; however, many older motor vehicles are in use which do not have these protective devices. Owners of automobiles should have seat belts installed which have the seal of approval of the American Seat Belt Council.

The responsibility for traffic safety is not limited to one group, one department, or one agency. To control this problem of deaths and injuries caused by motor vehicle accidents requires the co-operation of health, education and public safety officials. It requires the assistance of private physicians, citizens groups, and individuals in demanding stricter traffic legislation and licensure laws. While the problem will by no means be totally eliminated, it can be substantially lessened and many lives will be saved.



DEPARTMENT OF HEALTH

BUREAU OF LABORATORIES

Thomas S. Hosty, Ph.D., Director

October 1963

Examinations for intestinal parasites	350
Typhoid cultures (blood, feces, urine and other)	227
Brucella cultures	0
Examinations for malaria	2
Examinations for gonococci	1,775
Serologic tests for syphilis (blood and spinal fluid)	26,369
Darkfield examinations	3
Examinations for diphtheria bacilli and Vincent's	65
Agglutination tests	1
Examinations for Negri bodies (smears and animal inoculations)	251
Water examinations	2,277
Milk and dairy products examinations	4,178
Examinations for tubercle bacilli	4,007
Miscellaneous examinations	6,564
Total	*46,036

*Dothan Branch Laboratory Report not received to be included.

BUREAU OF PREVENTABLE DISEASES

W. H. Y. Smith, M. D., Director

CURRENT MORBIDITY STATISTICS

1963

	Sept.	Oct.	*E. E. Oct.
Tuberculosis	85	108	168
Syphilis	108	116	125
Gonorrhea	375	362	350
Chancroid	5	3	3
Typhoid fever	1	2	5
Undulant fever	0	0	1
Amebic dysentery	6	5	3
Scarlet fever and strep. throat	55	125	65
Diphtheria	2	3	9
Whooping cough	14	13	23
Meningitis	4	1	5
Tularemia	0	0	0
Tetanus	5	1	3
Poliomyelitis	9	4	8
Encephalitis	0	0	1
Smallpox	0	0	0
Measles	10	6	26
Chickenpox	1	0	4
Mumps	52	19	25
Infectious hepatitis	39	43	49
Typhus fever	0	2	1
Malaria	0	0	0
Cancer	764	623	592
Pellagra	4	1	0
Rheumatic fever	6	13	14
Rheumatic heart	24	24	19
Influenza	13	16	36
Pneumonia	126	116	145
Rabies—Human cases	1	0	0
Pos. animal heads	0	1	0

As reported by physicians and including deaths not reported as cases.

*E. E.—The estimated expectancy represents the median incidence of the past nine years.

BUREAU OF VITAL STATISTICS

Ralph W. Roberts, M. S., Director

PROVISIONAL BIRTH AND DEATH STATISTICS, AND COMPARATIVE DATA, SEPTEMBER 1963

Live Births Deaths Causes of Death	Number Registered During September 1963			Rates* (Annual Basis)		
	Total	White	Non-White	1963	1962	1961
Live Births	7,033	4,437	2,596	25.4	25.9	27.6
Deaths	2,359	1,524	835	8.5	8.6	8.7
Fetal Deaths	131	65	66	18.3	23.1	21.0
Infant Deaths—						
under one month	134	89	45	19.0	23.0	23.5
under one year	175	101	74	24.9	31.3	31.8
Maternal Deaths	3	2	1	3.2	8.2	9.1
Causes of Death						
Tuberculosis, 001-019	13	7	6	3.7	8.4	8.1
Syphilis, 020-029	5	1	4	1.8	1.8	4.8
Dysentery, 045-048	2	2		0.7	0.4	
Diphtheria, 055					0.4	
Whooping cough, 056	1		1	0.4		
Meningococcal infections, 057					0.4	0.4
Poliomyelitis, 080, 081					0.4	
Measles, 085						
Malignant neoplasms, 140-205	342	249	93	123.4	114.4	118.9
Diabetes mellitus, 260	23	18	5	8.3	11.7	12.9
Pellagra, 281	1					
Vascular lesions of central nervous system, 330-334	384	240	144	138.6	115.9	118.2
Rheumatic fever, 400-402	1		1	0.4	0.4	
Diseases of the heart, 410-443	763	512	251	275.3	278.4	283.1
Hypertension with heart disease, 400-443	112	42	70	40.4	42.3	53.0
Diseases of the arteries, 450-456	57	44	13	20.6	20.4	25.0
Influenza, 480-483	3		3	1.1	0.7	1.5
Pneumonia, all forms, 490-493	50	27	23	18.0	18.2	15.5
Bronchitis, 500-502	5	5		1.8	1.8	0.7
Appendicitis, 550-553	4	2	2	1.4	1.1	0.4
Intestinal obstruction and hernia, 560, 561, 570	13	7	6	4.7	2.9	5.9
Gastro-enteritis and colitis, under 2, 571, 0, 764	9	2	7	3.2	7.3	8.1
Cirrhosis of liver, 581	16	10	6	5.8	4.0	5.5
Diseases of pregnancy and childbirth, 640-689	3	2	1	4.2	8.2	9.1
Congenital malformations, 750-759	27	22	5	3.8	4.9	5.3
Immaturity at birth, 774-776	42	27	15	6.0	7.6	5.7
Accidents, total, 800-962	154	108	46	55.6	46.3	50.8
Motor vehicle accidents, 810-835, 960	93	73	20	33.6	22.6	26.1
All other defined causes	355	209	146	128.1	129.4	143.9
Ill-defined and unknown causes, 780-793, 795	86	29	57	31.0	55.8	32.8

*Rates: Birth and death—per 1,000 population

Infant deaths—per 1,000 live births

Fetal deaths—per 1,000 deliveries

Maternal deaths—per 10,000 deliveries

Deaths from specified causes—per 100,000 population

DEPARTMENT OF HEALTH

BUREAU OF LABORATORIES

Thomas S. Hosty, Ph.D., Director

November 1963

Examinations for intestinal parasites..	697
Typhoid cultures (blood, feces, urine and other).....	159
Brucella cultures	1
Examinations for Malaria	1
Examinations for gonococci	1,419
Serologic tests for syphilis (blood and spinal fluid).....	19,511
Darkfield examinations	3
Agglutination tests.....	1
Examinations for diphtheria bacilli and Vincent's.....	46
Complement fixation tests.....	26
Examinations for Negri bodies (smears and animal inoculations)	237
Water examinations.....	1,992
Milk and dairy products examinations	3,185
Examinations for tubercle bacilli	3,203
Miscellaneous examinations	13,059
Total	43,538

* * *

BUREAU OF PREVENTABLE DISEASES

W. H. Y. Smith, M. D., Director

Current Morbidity Statistics

1963

	Oct.	Nov.	*E. E. Nov.
Tuberculosis	108	120	116
Syphilis	116	117	111
Gonorrhea	362	353	275
Chancroid	3	5	2
Typhoid fever	2	0	3
Undulant fever.....	0	1	0
Amebic dysentery.....	5	8	2
Scarlet fever and strep. throat	125	122	79
Diphtheria	3	2	11
Whooping cough	13	15	35
Meningitis	1	6	10
Tularemia	0	0	0
Tetanus	1	3	1
Poliomyelitis	4	5	8
Encephalitis	0	0	1
Smallpox	0	0	0
Measles	6	7	44
Chickenpox	0	30	25
Mumps	19	174	40
Infectious hepatitis.....	43	46	26
Typhus fever.....	2	0	0
Malaria	0	0	0
Cancer	623	431	462
Pellagra	1	0	0
Rheumatic fever	13	17	11
Rheumatic heart	24	25	21
Influenza	16	62	118
Pneumonia	116	206	170
Rabies—Human cases	0	0	0
Pos. Animal heads	1	2	0

As reported by physicians and including deaths not reported as cases.

*E. E.—The estimated expectancy represents the median incidence of the past nine years.

BUREAU OF VITAL STATISTICS

Ralph W. Roberts, M. S., Director

PROVISIONAL BIRTH AND DEATH STATISTICS, AND COMPARATIVE DATA, OCTOBER 1963

Live Births Deaths Causes of Death	Number Registered During October			Rates* (Annual Basis)		
	Total	White	Non-White	1963	1962	1961
Live Births	6,835	4,587	2,248	23.9	23.8	24.8
Deaths	2,499	1,629	870	8.7	8.8	8.9
Fetal Deaths	148	77	71	21.2	19.2	19.0
Infant Deaths—						
under one month	153	71	82	22.4	21.9	20.5
under one year	207	95	112	30.3	28.7	30.7
Maternal Deaths	7	1	6	10.3	4.4	7.0
Causes of Death						
Tuberculosis, 001-019	30	13	17	10.5	7.8	8.9
Syphilis, 020-029	4	1	3	1.4	1.1	1.8
Dysentery, 045-048					0.4	0.4
Diphtheria, 055						
Whooping cough, 056						
Meningococcal infections, 057	4	3	1	1.4	0.4	
Poliomyelitis, 080, 081						
Measles, 085						
Malignant neoplasms, 140-205	354	261	93	123.6	130.5	110.8
Diabetes mellitus, 260	31	20	11	10.8	10.2	16.0
Pellagra, 281					0.4	
Vascular lesions of central nervous system, 330-334	319	196	123	111.4	120.6	124.7
Rheumatic fever, 400-402	1	1		0.3	1.1	1.1
Diseases of the heart, 410-443	818	585	233	285.6	291.6	303.5
Hypertension with heart disease, 440-443	115	55	60	40.2	43.4	47.4
Diseases of the arteries, 450-456	58	45	13	20.2	16.9	24.9
Influenza, 480-483	3	3		1.0	1.4	1.1
Pneumonia, all forms, 490-493	64	39	25	22.3	19.0	22.1
Bronchitis, 500-502	4	4		1.4	1.1	0.4
Appendicitis, 550-553	2	2		0.7	0.7	1.4
Intestinal obstruction and hernia, 560, 561, 570	13	7	6	4.5	6.7	2.5
Gastro-enteritis and colitis, under 2, 571, 0, 764	13	3	10	4.5	3.9	6.1
Cirrhosis of liver, 581	26	20	6	9.1	7.0	5.3
Diseases of pregnancy and childbirth, 640-689	7	1	6	10.0	4.4	7.0
Congenital malformations, 750-759	32	16	16	4.7	6.2	5.2
Immaturity at birth, 774-776	50	23	27	7.3	8.1	6.3
Accidents, total, 800-962	172	114	58	60.1	61.7	63.8
Motor vehicle accidents, 810-835, 960	85	56	29	29.7	36.3	35.3
All other defined causes	365	213	152	127.5	123.1	131.8
Ill-defined and unknown causes, 780-793, 795	129	59	70	45.0	43.7	37.8

*Rates—Birth and death—per 1,000 population
 Infant deaths—per 1,000 live births
 Fetal deaths—per 1,000 deliveries
 Maternal deaths—per 10,000 deliveries
 Deaths from specified causes—per 100,000 population

The Woman's Auxiliary

Dear Doctors:

First, please find last month's issue of this Journal, turn to the Woman's Auxiliary page, take your ballpoint pen in hand and shade Escambia County to match the organized counties. Don't know how this happened, but Escambia IS organized.

As we ring in this new year we might think of the bells as chiming for specific incidents, such as a whole chorus of bells for the magnificent polio immunization which is going on in the State of Alabama. Some people think physicians are concerned only with the sick, forgetting the other emphasis equally important—that of preventing disease. This is an opportunity for the "Communicate" portion of our year's theme, "Serve and Communicate" to be put into use. If you do not voice your feeling, many people may never realize that their doctor is vitally concerned with the prevention of disease.

Looking ahead for a bell-ringing opportunity, we find February 14, Valentines Day—and this is the time for you to use the form at the bottom of this page to order your special Valentine an AMA-ERF charm for her bracelet, secure in the knowledge that you are helping a medical student or medical research with the profit. The charms are in the shape of the State of Alabama, well made, come in sterling or various gold weights, most attractive; or you might be interested in a compact or Zippo lighter. Birthdays and anniversaries are good occasions also.



It will be an occasion to ring a bell when you have sent off those reservations for the state convention in Montgomery. Remember rooms will be at a premium because our meeting overlaps the state Dental Convention by one day. This time, both meetings are in Montgomery—ours April 23-24-25. While in the reservation mood, it would be well to take care of National in San Francisco, also. A reservation, so easily secured now, can be worth so much in time and comfort during a convention, avoiding a long trek to a different hotel.

We are going to try to leave time in our own state convention program for auxiliary members to visit your meeting and enjoy at least one of your speakers.

Hope to hear these bells ringing in my ears.

Sincerely,

Marlys R. Sutton

To: Mrs. Curtis Smith
79 Byrnes Blvd.
Mobile, Ala. 36608

Enclosed is check (made payable to AMA-ERF Auxiliary Fund) for \$_____.

- | | |
|--|---------|
| <input type="checkbox"/> 14 K gold charm..... | \$15.00 |
| <input type="checkbox"/> 10 K gold charm..... | 10.00 |
| <input type="checkbox"/> 1/10 K gold charm..... | 8.00 |
| <input type="checkbox"/> Sterling charm..... | 7.00 |
| <input type="checkbox"/> Gold compact..... | 12.00 |
| <input type="checkbox"/> Silver Zippo lighter..... | 13.75 |

Allow four to five weeks for delivery.

Send to: _____

(name and address)

OBITUARIES

DAVIE—Nuckols Thornton Davie, M. D., died on July 9, 1963 at the age of 76.

Dr. Davie received his medical degree from Tulane University School of Medicine in 1909. He interned at Bryce Hospital, Tuscaloosa, was a resident there from 1910 to 1912, and a resident at the New Orleans Eye, Ear, Nose and Throat Hospital in 1914.

He was a veteran of World War I and served overseas from April, 1918 to July, 1919 after completing a course of study at Army Medical School in Washington, D. C. in 1917. He resigned his commission in the Medical Corps of the regular army in 1924 and established the practice of EENT in Anniston.

Dr. Davie was a member of the Calhoun County Medical Society, serving as president in 1928, the Medical Association of the State of Alabama, the American Medical Association, American Otolaryngological Society, a charter member of the Board of Directors of the Susie Parker Stringfellow Memorial Hospital in Anniston, and treasurer for twenty years before his retirement.

He is survived by his wife, Helen Parker Davie.

KIRKLIN—Marion Augusta Kirklin, M. D., a native of Covington County, died on April 3, 1963 at the age of 77.

Dr. Kirklin received his medical degree from the Medical College of Alabama in 1913.

He was a member of the Medical Society of Mobile County, the Medical Association of the State of Alabama, and the American Medical Association. He was on the staff of the Providence Hospital, Mobile Infirmary, and Mobile General Hospital.

Survivors include two daughters, Mrs. W. B. Hattaway, III, Ft. Walton, Florida and Mrs. Morris Prestwood, Brundidge, Alabama; one sister, Mrs. John Beck, Andalusia, Alabama; four grandchildren, two great grandchildren, and other relatives.

MAXWELL—Walter John Maxwell, Sr., died on September 28, 1963 in Tuscaloosa, Alabama at the age of 86.

Dr. Maxwell received his medical degree from the University of the South in 1901. He was a general practitioner and obstetrician.

He was a member of the Colbert County Medical Society, the Medical Association of the State of Alabama, and the American Medical Association.

Survivors include three sons, Dr. W. J. Maxwell, Jr., McAllen, Texas; James Robert Maxwell, Abilene, Texas; and Thomas M. Maxwell, Sheffield; a number of grandchildren, nieces and nephews. The late Paul E. Maxwell of Sheffield was also a son of Dr. Maxwell.

NEWTON—George Edwin Newton, M. D., was born in Fayette, Alabama on August 15, 1905. He was the son of the late Thomas Ez-zard Newton and Alice Chambless Newton.

Dr. Newton received a B. S. degree from Howard College in Birmingham in 1929 and his M. D. degree from the University of Tennessee in 1936. He became County Health Officer in Prattville in 1937 and in 1941 bought the Old Prattville General Hospital.

He was a counsellor of the Medical Association of the State of Alabama, a member of the Southern Medical Association, and the American Medical Association.

In 1959 he was presented the Citizenship Award by the Prattville Civitan Club. In 1962 he was presented the Outstanding Lay Worker Award of the Alabama Rehabilitation Association for his contributions to rehabilitation work with crippled children, disabled people and mental patients. He was a member of the First Baptist Church in Prattville.

Dr. George Edwin Newton died December 8, 1963.

Dr. Newton is survived by his wife, the former Louise Jones; two daughters, Mrs. David Pierce and Mrs. Robert Jennings; a son, Thomas Edwin; a sister, Mrs. David H. Wright; two brothers, Felix Newton of Fay-

ette, and Reuben Newton of Jasper; and four grandchildren.

WILKINSON—John Edward Wilkinson, M. D., died on July 2, 1963 in Prattville, Alabama at the age of 85. A native of Gaston-burg, Alabama, Dr. Wilkinson received his M. D. degree from the University of the South in 1900. He specialized in children's diseases.

He was a medical examiner during World War I.

A Certificate of Distinction for fifty years service in the medical profession was awarded to Dr. Wilkinson in 1952.

He was a member of the Autauga County Medical Society, the Medical Association of the State of Alabama, and the American Medical Association.

Dr. Wilkinson was a general practitioner and a registered pharmacist. He was a steward in the First Methodist Church and was active in religious and civic work in Prattville.

He is survived by his wife, Alice Booth Wilkinson, and a daughter, Mary Louise Wilkinson Farrior.

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CURRENT CONCEPTS OF BRONCHOGENIC CARCINOMA*

WILLIAM D. LOGAN, JR., M. D., OSLER A. ABBOTT, M. D., and
CHARLES R. HATCHER, JR., M. D.

From the Division of Thoracic and Cardiovascular Surgery
Emory University School of Medicine, Atlanta, Georgia

The increasing frequency of diagnosis of bronchogenic carcinoma and the severity of this condition has placed it in increasing importance to the physician. Concepts of diagnosis and treatment are constantly being modified or altered in an effort to obtain better results.

Five hundred forty-one cases of proven bronchogenic carcinoma, occurring at Emory University Hospital and the Atlanta Veterans Administration Hospital (341 cases at Emory and 200 cases at Veterans Administration Hospital), between 1951 and 1961 were reviewed. This is a report of findings in this group of cases and discussion.

Age and Sex:

There is no significant difference in this data from other reports.^{1, 3} A predominance of males in their fifth and sixth decades is

noted. These figures are somewhat altered by the inclusion of the Veterans Administration cases which were all males. Analysis of the Emory University Hospital series of 341 cases, reveals a slight increase in the earlier age group (31 to 40), and an increase in females, particularly after the menopause.

Location:

There is equal distribution paralleling lung volume (Fig. 1). Although, most (79 per

Figure 1
LOCATION OF LESION
541* Cases Bronchogenic Carcinoma

	Right	Left
Mainstem Bronchus**	50	50
Upper Lobe	143	140
Middle Lobe	22	-----
Lower Lobe	71	63
TOTAL	286 (53.9%)	253 (46.1%)

*Presented before the Surgical Section of the Medical Association of the State of Alabama, Mobile, Alabama, April 25-27, 1963.

* In 2 cases lesions described as diffuse bilateral.

** On the right this may include concomitant involvement bronchus intermedius.

COMPOSITE SYMPTOMS BRONCHOGENIC CARCINOMA
241 MALES - V.A.H. SERIES

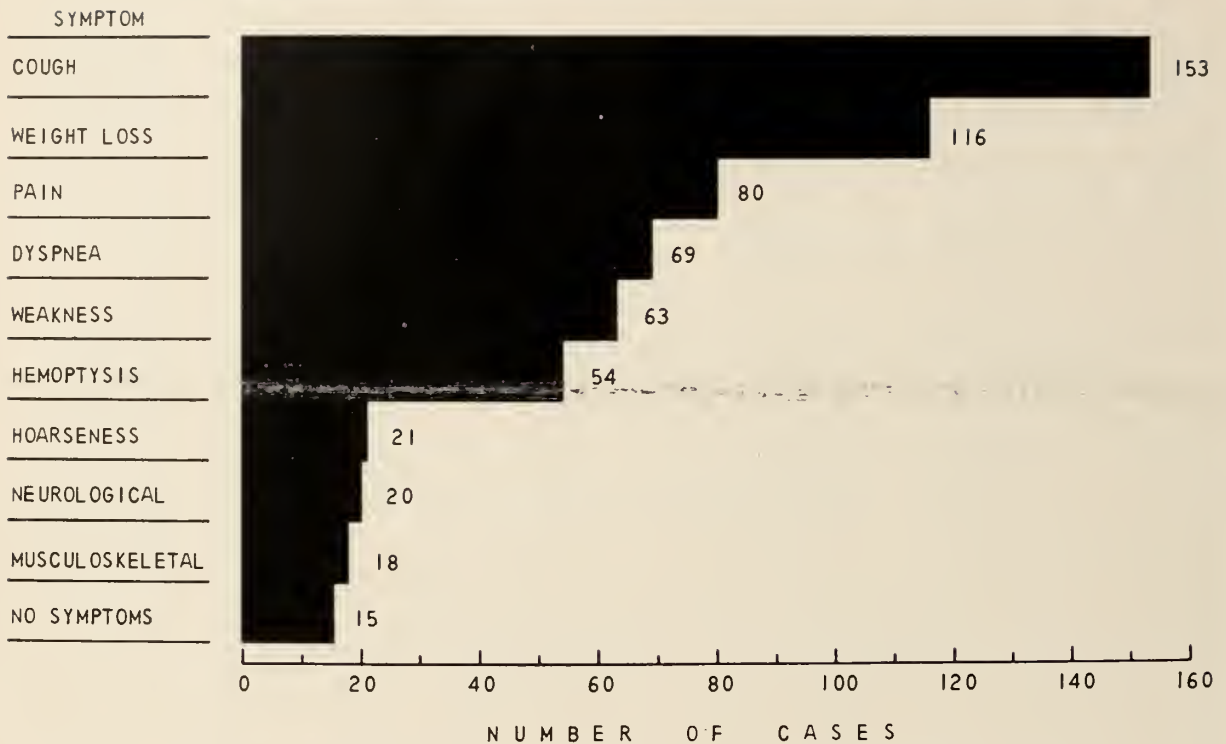


Figure 2

cent) of the lesions occur in the upper lobes or mainstem bronchi, it is well to remember that the upper lobes are the largest in volume size. No definite predilection to any particular area in the lung is apparent.

Symptoms:

Symptoms noted primarily in these reviewed cases are shown in Fig. 2. Hemoptysis, pain and dyspnea have long been considered some of the better prognostic symptoms, and these were contrasted. Hemoptysis and pain seem to be comparable in the percentage resectable and did not preclude resectional therapy. Dyspnea seems to be a much worse prognostic symptom, especially if it has developed recently in the clinical history, suggesting direct relation to the neoplasm.

UNUSUAL INITIAL SYMPTOMS 541 CASES BRONCHOGENIC CARCINOMA

OSTEOARTHROPATHY	SUPERIOR VENA CAVAL OBSTRUCTION
OSTEOARTHRITIS	HORNER'S SYNDROME
NEUROLOGICAL DISTURBANCES	DYSPHAGIA
PALPABLE LYMPH NODES	GASTROINTESTINAL SYMPTOMS
MIGRATORY THROMBOPHLEBITIS	

Figure 3

Numerous unusual manifestations may be the presenting symptom of the patient (Fig. 3). These are stressed for the importance of an early diagnosis. The incorrect interpretation of arthritic, peripheral vascular, and neurologic symptoms may add considerable delay to adequate management. An example



Figure 4

Fifty-five year old patient who had been treated for rheumatoid arthritis for six months. Hemoptysis occurred and X-ray revealed bronchogenic carcinoma in the right upper lobe. Note marked periosteal elevation in all extremities.

of pulmonary osteoarthropathy is seen in Fig. 4.

This patient exhibited immediate relief of his extremity discomfort following palliative right upper lobectomy and vagotomy, and lived more comfortably for one year.

Roentgenographic Diagnosis:

Aside from symptoms, the problem of bronchogenic carcinoma generally depends upon interpretation of lesions that are seen on X-ray. Obviously, large infiltrating or hilar masses are easily suspect for carcinoma. The small peripheral or cystic lesions are more difficult.

The varied ability in rate of growth with

bronchogenic carcinoma is also confusing at times. There are several patients in this group who had lesions followed one to seven years by physicians who felt they were static and therefore could not represent carcinoma. A feeling of safety in seeing lesions that do not change in size is probably unwarranted and observation does not prevent metastases even though the lesion itself may never change in size. Fig. 5 shows examples of relatively static lesions.

Thin walled cystic areas are usually considered benign. However, if they occur in the anterior segment of the upper lobes carcinoma must be strongly considered (Fig. 6).

In spite of these difficult problems, there can be an intelligent approach to these



Figure 5A



Figure 5B



Figure 5C

Figure 5

(a) Forty-seven year old lady followed with yearly X-rays for six years. Possible enlargement during the past year. At resection she had bronchogenic carcinoma. (b) A 36 year old man who was followed almost two years with a diagnosis of infectious process and cavitation before exploration which revealed bronchogenic carcinoma. (c) The woman followed approximately two years for a relatively static lesion which turned out to be carcinoma upon resection.



Figure 6

Seventy-four year old man with thin walled cystic lesion. Exploration revealed carcinoma.

fearful lung lesions. Fig. 7 is a chart taken from reports by Dr. Garland and his group in California, which is an effort to categorize the important points in this consideration.^{2,5} Note that the *size* of the lesion, *age* of the patient, absence or presence of positive *skin tests*, and absence or presence of *calcium* in the lesion are significant points.

Pulmonary Angiography:

In the past few years the development and application of pulmonary angiography has been of interest. Its possible ability to suggest operability or inoperability has been considered and in some cases, the actual diagnosis. Distortion or disturbance in arterial or venous flow has been found more often related to bronchogenic carcinoma as opposed to benign lesions. These studies were performed on 21 patients with peripheral masses.

Thirteen were proven malignant and eight benign. Six of the 13 malignant lesions revealed some distortion or disturbance in pulmonary blood flow. Only one of the eight benign cases revealed some pulmonary vascular deformity. This was found to be due to a granulomatous node which was pressing on the right inferior pulmonary vein. Angiography cannot be considered absolutely diagnostic in this problem, but may be of considerable value.

Treatment:

As surgery is the primary mode of curing bronchogenic carcinoma, operability at the time the patient is first seen must be considered in any study. In contrasting the Emory University Group with the Veterans Administration Group there is a six times

DISTINGUISHING FEATURES OF SOLITARY PULMONARY LESIONS

Characteristics	Favors Benign Lesion	Favors Malignant Lesion
roentgenologic findings		
size	less than 1 cm.	more than 4 cm.
shape	regular	irregular
margin	smooth and round	notched or indefinite
calcification	present	absent
cavitation	absent or central	eccentric
laboratory findings		
skin tests	positive	negative
serologic tests	positive	negative
cytologic examination	negative	positive
medical findings		
sex	female	male
age	under 45 years	over 45 years
hemoptysis	absent	present
persistent chest pain	absent	present
arthralgia	absent	present
clubbing of digits	absent	present

40/Therapeutic Notes

Figure 7

greater percentage in the former group (35 per cent to 6 per cent).

The reasons for this difference must be considered. First, the stage and involvement of the disease when the patient presents himself. The increased efforts of public education and mass chest X-ray examinations has perhaps given the doctor some advantage, but still leaves much to be desired. The best case finding mechanism seems to be the alerted more intelligent patient who apparently is more sensitive to disturbances in physiology.

Next is the fact that the Atlanta V. A. Hospital is a regional hospital for radiation therapy. Many of these patients are diagnosed elsewhere and sent in as inoperable cases for radiation treatment only.

Also, the attitude of the surgeon or physician treating will alter these figures.

Results of treatment of bronchogenic carcinoma is varied, and in each report, one must scrutinize closely the group of patients that are being studied and their selectability. The overall survival figures in this group of patients was approximately 13 per cent, three to five years survival rate of the Emory University Hospital Group and only 3 per cent in the V. A. Group. Some of the factors already mentioned may play a part in this discrepancy. In those patients who had resection and no evidence of lymph node metastases there was a 35 per cent survival without recurrence.

The treatment has consisted of three forms; resectional surgery, X-ray or cobalt radiation

therapy, and intravenous drugs (primarily nitrogen mustard). During the past several years a combined approach has been utilized on many patients wherein they receive nitrogen mustard, pre-op or post-op radiation, and resection. The data would suggest that use of these three will give better results.

Since the first report by Shaw and Paulson⁴ concerning preoperative radiation a selected group of patients has been treated in this manner. The selectability for preoperative radiation is primarily based on those patients with evidence of *rapidly growing* tumors, those with *significant infection* in the malignancy, those whose condition clinically suggests an *unusual surgical risk* and patients with *apical lesions or otherwise termed Pancoast syndrome*.

Only time will give us an answer on this increased effort approach.

SUMMARY

- 1) Five hundred forty-one cases of bronchogenic carcinoma have been reviewed at Emory University Hospital and Atlanta V. A. Hospital.
- 2) General data is comparable to other series and shows possible increase in the

younger age group and in the female after menopause.

- 3) Unusual symptoms are discussed.
- 4) Cystic lesions, particularly in anterior segments, and the so-called static lesions are strongly suspect of carcinoma.
- 5) Pulmonary angiography as a diagnostic and prognostic tool is discussed.
- 6) Resection in cases with no lymph node involvement yielded 35 per cent survival with evidence of recurrence.
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DANGERS OF STEROIDS IN OPHTHALMOLOGY WITH REPORT OF A CASE OF MYCOTIC PERFORATING CORNEAL ULCER*

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A review of the literature indicates that the use of corticoids, in the treatment of various ophthalmic disorders, lowers the normal resistance of ocular tissues and predisposes them to exogenous infection.

Fungi commonly found in the environment are usually saprophytes and have little ability to invade normal ocular tissues. However, injury of the cornea, a pre-existing bacterial infection, or a reduction of the normal tissue resistance due to use of antibiotics and steroids, may allow these organisms to invade these tissues and produce lesions.¹

Ophthalmologists have for years cautioned against the use of steroids in any case of suspected dendritic or herpes simplex of the cornea. Many published reports have described, with increasing frequency, mycotic corneal lesions, including disciform keratitis, perforation of the cornea, hypopyon and endophthalmitis. In an analysis of 118 such cases all severe complications took place in eyes which had been treated with a steroid drug.²

At the last Pan American Association of Ophthalmology meeting in Lima, Peru a sequence of colored slides showed the rapid deterioration of an eye while being treated for a dendritic ulcer with topical steroids. A panophthalmitis developed and the eye had to be enucleated. In many cases seen today we cannot rule out a virus or mycotic infection in the cornea, however, it becomes more and more imperative that caution be used in prescribing steroid or antibiotic-steroid combinations so often recommended for such infections.

Protracted, intensive local corticosteroid therapy, or prolonged systemic steroid therapy may produce glaucoma in apparently normal eyes.^{3,4} A patient under steroid therapy must, therefore, be watched carefully for signs of increased intraocular pressure.^{11, 12, 13}

Theodore, Littman and Almeda⁵ have published excellent papers describing 11 cases of mycotic endophthalmitis secondary to cataract extraction and they state that fungi have been largely ignored as a cause of postoperative cataract infections. Their excellent treatise should be studied again by each of us in regard to diagnosis and therapy of mycotic infections.

*Submitted for publication from the Department of Ophthalmology, Mobile Infirmary.

Oglesby et al⁶ found posterior subcapsular cataracts in a group of patients being treated for rheumatoid arthritis with moderate to large doses of systemic steroids. They advise that every effort should be employed to keep chronic systemic corticosteroid administration at minimum dosage levels.

Gingrich⁷ reported 12 cases of keratomycosis stating that adrenocorticosteroids favor the growth of fungi in the eye, and stated that every physician, who attends a corneal injury open to contamination, should know that topical steroids are contraindicated. The sad thing about postoperative or post-traumatic fungus infections of the eye is that they are usually not diagnosed until pathological studies are made on the enucleated eye.

REPORT OF CASE

A 34 year old white, healthy, female was seen on June 13, 1962 shortly after being struck in the right eye with a large rock thrown from a power lawn mower at a very close range and with a terrific amount of force. The patient had an abrasion of the cornea in the upper nasal quadrant, but no perforation of the cornea. The anterior chamber was full of fresh blood, no light reflex could be obtained and the woman was in much pain.

This type of traumatic injury to the eye always produces a traumatic uveitis and, almost invariably, secondary glaucoma and usually a traumatic cataract. If glaucoma does not occur from the blocking of the iris angle from the blood or from the traumatic uveitis, glaucoma frequently develops as a result of the traumatic cataractous lens swelling.

The patient was placed on Avazyme[®] tablets to help absorb the blood. She was placed on one Diamox[®] tablet, 250mg. every four hours for six doses and then one every six hours to prevent glaucoma.

To prevent a severe uveitis, the patient was placed on Celestone[®], 0.6mg. tablets,

four at once then two every six hours. The patient was seen the next morning and in spite of the Celestone[®], she had a very intense uveitis with many cells in the anterior chamber and an elevated intraocular pressure of 28 Schiotz. At this time, ½cc. of Depomedrol[®] (steroid) was injected subconjunctivally to help alleviate the uveitis. On June 18th, the eye appeared slightly improved and the steroid dose was reduced gradually to the level of .6 mg., Q. I. D. The uveitis was still present. On June 27, 1962 the intraocular pressure was still elevated to 26 Schiotz; Diamox[®] being given one every six hours and Celestone[®] reduced to one every eight hours. The patient began developing some edema and other signs of Cushing's syndrome from the steroid. She was placed on Naturetin-K[®], ½gm. twice a day, and the steroid was gradually reduced to one tablet every 12 hours. On July 6, 1962 the intraocular pressure in the eye was normal. The uveitis was still present but mild, and therefore, ½cc. of Depomedrol[®] was injected subconjunctivally.

On July 11, 1962 atropine eye ointment was used, since the danger of glaucoma had subsided, and the steroid dose was reduced to .3mg. a day to be continued for four days. Intraocular pressure was normal; Naturetin-K[®] was being continued. The signs of Cushing's syndrome gradually subsided.

The original corneal abrasion did not give any trouble and the cornea healed in 24 hours and never at any time presented a problem. The only difficulty was with the severe uveitis, blood in the anterior chamber and blood present on the anterior lens capsule, and actually in the lens, since the lens was slightly torn due to the impact. On July 21, 1962 Neo-Propisol[®] eye drops, a fungistatic, were used Q. I. D. to prevent the development of fungus infection. The patient was also using Decadron[®] eye drops, one drop three times a day. On August 10, 1962 intraocular pressure was 15.6, the cornea was well healed, the eye looked good. She occasionally had pain in the eye and stated that she used a drop of Decadron[®] ophthalmic eye solution when this pain occurred.

On August 20, 1962 the patient had a very superficial staining of the cornea with fluorescein solution at the site of the old wound. The Decadron® eye drops were discontinued, and Neo-Propisol® drops were prescribed every two hours during the day and once in the night. At this time, the small staining area of the cornea seemed insignificant.

On August 25 her intraocular pressure had increased to 28. She had a very definite corneal ulcer present at the site of the old wound. Culture from the ulcer taken at this time before medication was started was reported negative for micro organisms. Combiotic® ½gm. every 12 hours and intensive oral Chloromycetin® and Mycostatin® therapy were prescribed. Polymyxin® and Neomycin® were injected subconjunctivally and Neo-Propisol® drops used every two hours. Chloromycetin® was used systemically because it is one of few antibiotics whose effectiveness in ophthalmology has not been limited by the "barrier" between the blood and the aqueous or vitreous humor.

On August 26 a very definite corneal abscess, 10mm. in diameter, was present. This seemed to be a true corneal abscess and at the time was not thought to be a fungus infection since there was much pus present in the anterior chamber.

A day later it was suspected that the patient might have a mycotic-corneal ulcer, particularly since previous cultures for bacteria were negative. The corneal area was piled up into a ragged, grayish-white mass with fuzzy edges. A 3+ aqueous flare was noted. Ten cc's. of immune globulin were given intramuscularly. At this time mycelium was found in a stained direct smear from the wound. Mycelium was found also in a specimen examined in ten per cent potassium hydroxide. The hyphae were wide, septate and brown.

Culture media inoculated with material from the ulcer developed colonies of a rapidly growing fluffy black fungus. The culture was sent to the Alabama State Department of Public Health, and was subsequently referred to the Communicable Disease Center, At-

lanta, Georgia. The fungus was identified as *Curvularia geniculata*. A description of this isolate is given by Dr. Lucille K. Georg of the Mycology Unit Communicable Disease Center, a report immediately following this paper.

Amphotericin-B® eye drops were prepared in distilled water (not saline) in a concentration of 3000 micrograms per ml., and were used every hour, day and night, along with 30 per cent sodium sulfacetamide eye drops, atropine eye drops and constant hot compresses. Since most antibiotics might predispose the eye to fungi, antibiotics were discontinued both topically and systemically except for the 30 per cent sodium sulfacetamide and Amphotericin-B® drops both of which have a specific action on fungi. Gantanol®, four tablets at once and two every eight hours, was prescribed.

Since treating this patient, two papers have appeared which stated that Chloromycetin® has no inhibitory or stimulatory effect on *Candida albicans* or *Candida tropicalis*.^{8,9} I, therefore, could have continued this antibiotic if needed for any secondary infection.

The corneal ulcer perforated and the anterior chamber of the eye was lost due to the aqueous leaking through the corneal wound. A conjunctival flap was prepared and pulled over the corneal ulcer. Amphotericin-B® was given, as a very slow drip, intravenously. This produced a severe reaction of true chills, and elevation of the patient's temperature to 104 degrees. I used 50mg. of the drug, intravenously, whereas the dose is larger than this for a patient of this size. Severe nausea and vomiting persisted for 24 hours. The patient's BUN increased from ten to 19. No further attempt was made to use this drug intravenously, but it was used topically every two hours as drops, along with the 30 per cent sodium sulfacetamide.

The wound sealed over under the conjunctival flap, the anterior chamber became clear, and the patient was doing well with no recurrence of the corneal ulcer. She did have some secondary closed-angle glaucoma which required treatment with Daranide, one half

table B. I. D. Due to the presence of old blood on the anterior surface of the lens capsule and due to traumatic cataract, the patient's vision was limited. The true condition of the retina was not known although the patient could see 20/80 with a pin hole disc.

Subsequent to discharge from the hospital the closed-angle glaucoma persisted. This was primarily due to increase in swelling of the hypermature lens. On November 20 the conjunctival flap was cut away from the site of the ulcer since it had adhered only at this spot. After the use of urea, intravenously, a limbal based conjunctival flap was prepared and McLean sutures placed. The lens was delivered intracapsularly, without the use of alphachymotrypsin. The few tiny posterior synechiae were easily freed attesting to the fact that steroids remarkably cut down inflammation in this eye. A large complete three stage basal iridectomy was performed to cure the glaucoma.

Following uneventful surgical healing the intraocular pressure gradually increased to 38 Schiotz. This could be controlled with Daranide® or with one Diamox® sequel every eight to 12 hours, but after a time the patient could no longer tolerate either drug because of severe nausea. A cyclodialysis was performed inferiorly and temporally on January 4, 1963.

The eye has remained white and clear of trouble until this date. Vision is correctible to 20/50 and may improve. The intraocular pressure has remained normal—a contact lens can be fitted to improve vision.

COMMENTS

This case again stresses the very great danger in the use of steroids, both systemically and topically. In most mycotic eye infections reported, pus has been observed in the anterior chamber although in the early stage of the infection, very little evidence of fungus infection could be seen.

Although this patient had absolutely no

early corneal ulceration, she later developed a fungus infection of the cornea apparently due to the use of steroids. The steroids were absolutely essential in this case, as the eye could not possibly be saved without the use of steroids.

In my experience, such eyes have been saved utilizing steroids and have resulted in 20/20 vision. Unfortunately in this case, the perforated corneal ulcer was a very serious complication, and I feel that it was due entirely to the fungus infection and not due to bacteria since at no time were we able to culture bacteria from the wound. The first culture was taken immediately at the first time I saw the patient with a full blown ulcer, and if it had been bacterial in origin, some bacteria would have been found in the cultures taken directly from the ulcer.

It behooves us all to emphasize and re-emphasize the ophthalmic dangers of topical as well as systemic uses of steroids for any condition. In the treatment of most infections of the eye steroids should be used only when needed, and not in every case of red eye, as they are often used by doctors who have not been cautioned about the dangers. Neo-propisol and sulfacetamide are non traumatic, fungistatic, but not fungicidal. Neither causes corneal damage and either can be used along with topical steroids, if steroids are indicated. If deep corneal mycotic infection exists 30 per cent sodium sulfacetamide by intophoresis is the method of choice. Lilly's 1-5,000 Thimerasol® ointment is fungicidal, but can cause corneal injury. Amphotericin-B® is fungistatic and worked dramatically well in clearing the mycotic infection in this case and prevented the fungus from spreading throughout the eye. Amphotericin-B® should be used intravenously in severe cases, but caution must be exercised as the blood NPN may rise rapidly. Chills and fever usually occur with the use of this drug intravenously and are to be expected.

Immune globulin in 10cc. doses (5cc's. in each hip muscle) is a valuable adjunct in these cases. It can be repeated on several occasions if needed.

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ANNUAL SESSION
MEDICAL ASSOCIATION OF THE
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APRIL 23, 24, 25, 1964

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MAKE YOUR RESERVATIONS NOW!

Curvularia Geniculata, A Cause of Mycotic Keratitis

Lucille K. Georg, Ph. D.

Fungi commonly found in the environment are usually saprophytes, and have little ability to invade normal ocular tissues. However, injury to the cornea, a pre-existing keratitis, or a reduction of normal tissue resistance due to the use of antibiotics and steroids, may allow certain "saprophytic" fungi to invade these tissues and produce lesions.

Such a case is described in the preceding report, "Mycotic Perforating Corneal Ulcer," by Dr. Claude M. Warren, Jr.¹ Here a combination of factors: direct injury to the cornea, and the use of corticosteroids, apparently predisposed the corneal tissues to invasion by the common, usually saprophytic fungus, *Curvularia geniculata*.

A diagnosis of mycotic keratitis is often difficult to establish. The mere isolation of a fungus from the clinical lesion is not adequate. Demonstration of the presence of fungus elements in the lesion, and the repeated isolation of a fungus species with similar morphological elements, is required for accurate diagnosis.² In the case described by Dr. Warren, a wide, septate, dematiaceous (brown-colored) branched mycelium was demonstrated in a KOH mount made with scrapings from the lesion. A stained smear also showed mycelial filaments. Although several cultural studies were made, the only microorganism isolated was *C. geniculata*.

The identification of the fungus was kindly confirmed by Dr. R. R. Nelson.*

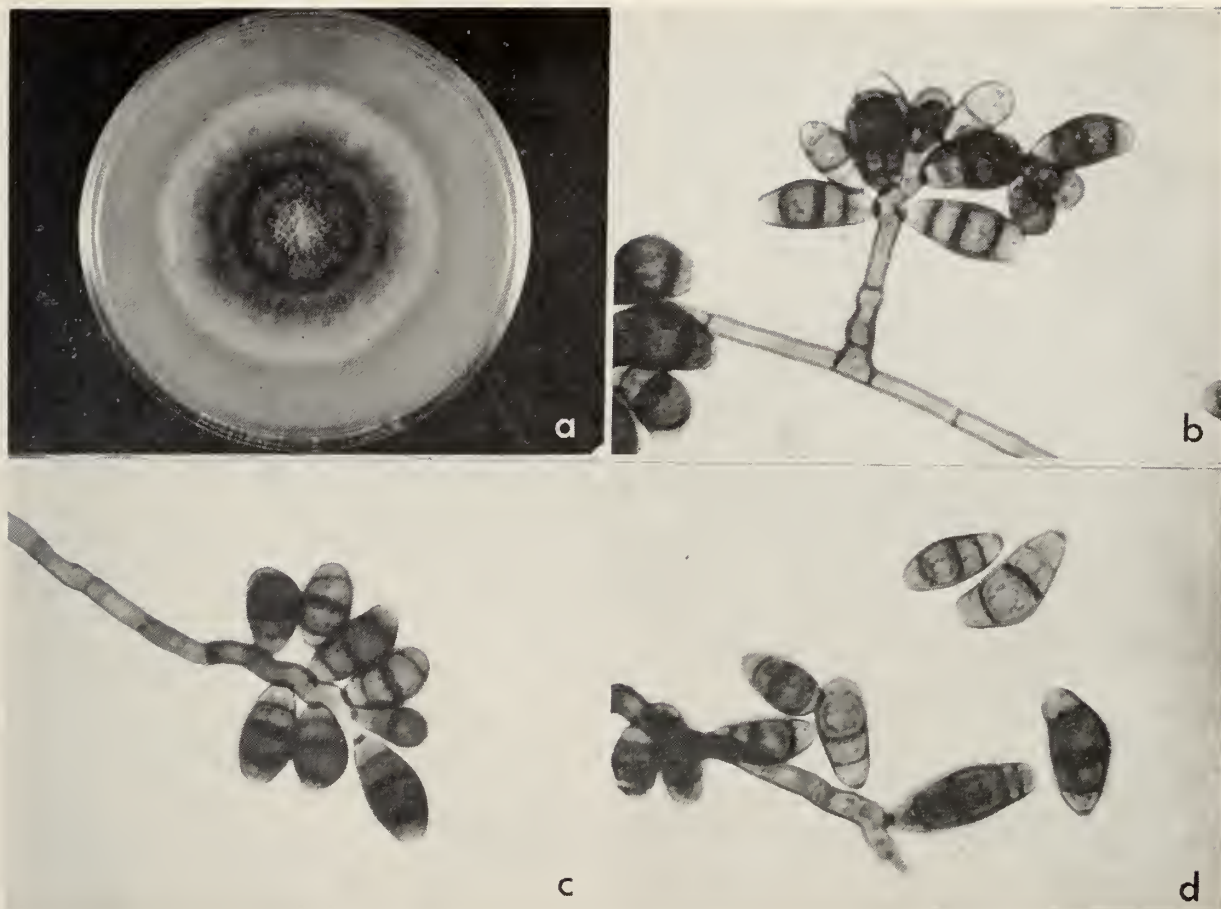
IDENTIFICATION OF CURVULARIA GENICULATA

C. geniculata is a common cosmopolitan, saprophytic fungus. According to Sprague,³ "In the northern Great Plains of the United States, most isolates are nonparasitic on seedlings of grasses and cereals. In a few cases, however, isolates are parasitic on certain grasses, but scarcely so on cereals."

C. geniculata produces a dark brown to nearly black colony with considerable aerial mycelium giving it a fluffy appearance. The reverse side of the colony is black. Microscopic examination reveals that the mycelium as well as the conidiophores and conidia are dematiaceous or light brown in color. The conidiophore which is a simple, several-celled stalk of 4-5 microns in diameter, has an irregular shape and surface giving the structure the appearance of a knobby stick. The irregular shape is due to changes in direction of the growth of the conidiophore in a zigzag fashion, in order to accommodate the large several-celled conidia that are borne in succession first on one side and then the other side of the developing tip. The irregularities on the surface are due to the presence of flat

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Illustrations

Plate I *Curvularia geniculata* isolated from eye lesion.

- a. Colony on Sabouraud dextrose agar, 5 days.
- b. Conidiophore with spores attached. 400 X.
- c. Portion of conidiophore showing irregular shape and attachments of conidia. 400 X.
- d. Detached conidia. 600 X.

scars that mark the points of attachment of the conidia.

The brown, thick-walled, septate conidia are 3 to 5 celled, but most commonly their shape is unequally ventricose-fusiform, or blunt spindle-shaped with swelling at the middle or at one side of the middle. Usually the third cell from the base is slightly larger and darker than the end cells, which are nearly hyaline. Most of the conidia are straight or nearly straight; however, if the swelling of the third or fourth cell is at one side of the middle, curved spores result. In this species, the hilum or point of attachment of the conidium often protrudes from the basal cell

when the spore is released from the conidiophore. The conidia range in size from 21-50 microns by 10-15 microns.

DISCUSSION

Fungi, that are usually non-pathogenic, but which under certain conditions are able to invade living tissues and produce lesions, have been aptly called "opportunistic fungi." Although species from a number of genera have been included in this category, certain genera appear to be more commonly involved in mycotic keratitis than others.⁴

This is the third report of an ocular infection by members of the genus *Curvularia*.

In the first report by Anderson et al.⁵ *C. lunata* was isolated several times from the diseased eye, however, fungus elements were not reported as present in scrapings taken from the lesion. In the second report by Nityanada, et al.,⁶ dematiaceous mycelium was demonstrated in scrapings from a corneal ulcer, and *C. lunata* was isolated several times. This fungus has been described also as a cause of multiple mycetomas in a Senegalese man by Baylet et al.⁷ Black grains, composed of dematiaceous mycelium and chlamydospores were observed in pus from draining sinuses in this patient. A number of the grains yielded pure cultures of *C. lunata*.

Members of the genus *Curvularia* and the closely related genus *Helminthosporium** have been implicated as agents of mycetoma in animals. The author, in 1953,⁸ observed a case of mycetoma in the foot of a dog due to a *Helminthosporium* of undetermined species. The tissue contained numerous black granules which were grossly visible. Microscopic examination of the granules revealed masses of wide, brown mycelium and many large brown chlamydospores. *Helminthosporium* was repeatedly isolated from this material. Bridges, in 1957,⁹ identified *C. geniculata* as the etiologic agent in multiple mycetomas affecting the feet of a dog. Large black granules made up of brown mycelium and chlamydospores were demonstrated in the tissues. That author in 1960¹⁰ also described three cases of nasal granulomata of cattle in which wide dematiaceous mycelium and chlamydospores were present. Recently, Roberts et al.¹¹ have reported three additional cases of mycetoma of the bovine mucosa with similar dematiaceous mycelium. From one of these animals a *Helminthosporium* of undetermined species was cultured repeatedly.

There appears to be considerable evidence that fungi of the genera *Curvularia* and *Helminthosporium* should be included among opportunistic fungi capable of invading tissues of man and animals.

SUMMARY

Curvularia geniculata has been described as an agent of mycotic keratitis.

Reduction of normal tissue resistance due to injury and the use of corticosteroids apparently predisposes ocular tissue to invasion by this and related fungi.

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**Helminthosporium* species are morphologically similar to *Curvularia* species, except that the conidia are always straight.



Editorials

Medical Mavericks

An Iowa County's Doctors Rebuff Federal Aid on Welfare Cases; Local Plan Meets the Need

By Michael G. Gartner

BURLINGTON, Iowa—Doctors in Des Moines County here in southeastern Iowa are waging a war against Federal and state medical aid, and they're winning hands down.

The doctors, working in concert with the Des Moines County Board of Supervisors, have continually refused to participate in a Federal-state plan of medical care for welfare recipients. Under the plan, the state pays such medical bills with about 25 per cent state funds, 25 per cent county funds and about 50 per cent Federal funds.

In lieu of the nationwide program, the doctors and county officials have set up their own medical care system, which they maintain provides better care at far less cost. The physicians take a dim view of the principle of Federal aid and take pride that Des Moines County—which contains neither the capital city of Des Moines nor the Des Moines River—is the only one of Iowa's 99 counties where the medical fraternity refuses Federal aid.

The local position is summed up by Dr. Frank Ober, an orthopedic surgeon and a leading opponent of the Federal-state plan: "We do much of the work for nothing, and certainly cheaper than the surrounding counties. We feel it is a local problem and plan to deal with it as such. We're not above tak-

ing care of the poor, but when they become charges of the Federal Government, they no longer are poor." Adds Dr. G. M. Gibbs: "We don't want to be bossed around by a bunch of men in Des Moines and Washington."

That "bunch of men in Des Moines"—Marshall Jewell, Lawrence Putney and Mrs. Irene Smith—constitute the State Board of Social Welfare. They want the county to accept the Federal program so it will be uniform throughout the state, but they concede the county is doing a good job of taking care of welfare recipients. "While we're not pressuring anyone, we would hope that eventually they would want to join," says Mr. Jewell. He adds: "The Federal people would prefer that we do have a uniform program."

Washington's Attitude

The Federal Government, which has been providing medical funds for welfare cases since the Social Security Act was passed in 1935, says its only concern is that equal care is provided in all the counties of states using the Federal method. "We have no argument with the doctors in Des Moines County," says a spokesman for the Department of Health,

Education and Welfare. "If a doctor wishes to take no Federal payment, this is his privilege. It violates no regulation." The spokesman says that in 1962 total medical payments in all states were \$713.5 million, \$394.7 million of which was Federal money. Ten years earlier, the outlay was \$70.5 million, including an estimated \$11.3 million of Federal funds.

Relations between the state and the county haven't always been calm. Two years ago the state board ousted the county welfare director, Robert Flack, primarily because he sided with the local doctors.

There are about 40 medical doctors in the county, which borders the Mississippi River and which has a population of 45,000; one of the doctors is in Mediapolis and the rest are in this industrialized county seat town of 30,000. Their unified stand against Federal aid is entirely a county matter, according to the American Medical Association. The AMA says it "has never opposed Government participation in medical programs for the needy," although it is "against assistance for broad groups of people," such as would be provided under President Kennedy's plan of medical care for the aged.

In Des Moines County the standard fee for an office call by a welfare recipient is \$2; for a home call it is \$3, and often the doctors charge nothing. These are in contrast to the \$3 office call and \$6 home call charged solvent patients in the county and the \$6 office call and \$6 home call generally charged welfare recipients in counties enrolled in the Federal plan.

Des Moines County pays the bills out of county funds. County officials and doctors both believe the costs of care would go up sharply if the Federal plan were initiated. Comments from other counties seem to back this up. A county attorney in southwestern Iowa wrote to Des Moines County officials that his county's "experience with medical expense under the (Federal) plan has been sad. It is not unlike a neighboring county of ours where the cost under the plan was ten times what it was under local control."

An official of Page County says costs at least tripled when the Federal plan was instituted. The official lays the rise to an increase in the number of "chiselers and malingerers on the program." He adds, "Local people can handle this much better than outsiders."

Milton Distlehorst, chairman of the County Board of Supervisors, says if the Federal plan were initiated "overall costs probably would be about four times as much as they are now and so Des Moines County's 25 per cent share would be about the same then as its 100 per cent share is now."

Fees Would Rise

One reason for the probable cost rise under the Federal plan would be increased fees. "We'd shoot them up," says Burlington's Dr. Gibbs, a 63-year-old grandfather who serves part-time as county doctor for a minimal fee. Dr. Gibbs, who also carries on a large private practice in a house next door to Burlington Hospital, says current fees are the lowest in the state.

Medical care, too, is better for welfare recipients in Des Moines County than elsewhere in the state, the doctors claim. Among the reasons they cite: Doctors take exceptional interest in the program since they help administer it, the pressure from the state to join the Federal-state plan makes them be extremely careful to treat all deserving people, and treat them well, yet the low fees make them more careful in screening out the chiselers and malingerers.

Though the doctors' claims may be exaggerated, they must be at least partially true. For the physicians are penetrating the state's stubborn resistance to their plan. Says the state board's Mrs. Smith: "We haven't found people in Des Moines County lacking for medical care." Adds Mr. Jewell: "We don't have any real concern any more." This new attitude in the capital suits the doctors here just fine.

Reprinted from *The Wall Street Journal*, Thursday, October 31, 1963.

THE MONTH IN WASHINGTON

Washington, D. C.—Proposals to provide limited health care for the aged under social security continue to be the most important legislation before Congress so far as the medical profession is concerned.

In his State of the Union message to Congress, President Johnson labeled it "must" legislation and asked for Congressional approval before the end of this summer.

The House Ways and Means Committee late in January wound up hearings on the King-Anderson bill, the Administration's medicare legislation. The hearings had been interrupted by President Kennedy's assassination.

The committee—with a majority of its members believed to still be opposed to such legislation—did not indicate immediately when it would act further on the bill.

In commenting on the State of the Union message, Dr. Edward R. Annis, president of the American Medical Association, said that President Johnson apparently had been grossly misinformed by his advisers on the legislation.

"Medicare would not be an insurance program of health care for the elderly, and workers would not contribute to a fund for their old age," Dr. Annis said.

"Medicare would be strictly a tax program, forcing wage earners to pay a substantial increase in their payroll taxes to finance hospitalization for everyone over 65, including those who are wealthy and millions of others who already are protected with hospital insurance.

"The President has also been misinformed on the cost of such a program. Testimony of the Chief Actuary of the Social Security Administration before the Ways and Means Committee in November shows that every worker earning one hundred dollars or more a week would be forced to pay at least 23 per cent more in payroll taxes to finance this inequitable program.

"Medicare is unnecessary. Private health insurance, now protecting more than 10 million elderly, is available to those who can pay their own way, and the Kerr-Mills Law, already enacted in more than 40 states, can help those who need help."

Other legislative proposals of interest to physicians include:

An amendment to the Keogh law that would remove the present 50 per cent limitation on the amount of income tax deduction a self-employed person can claim on his annual retirement savings. It also removes the \$2,500 or ten per cent of income limitation on the amount of retirement savings an individual with employees could use for tax deduction purposes. This would be a tremendous boost for the Keogh program and for self-employed persons with retirement savings plans.

Rep. Eugene Keogh (D., N. Y.) and Sen. George Smathers (D., Fla.) are sponsoring the amendment.

The Internal Revenue Service recently issued a tentative ruling that was a setback to physicians and other professional men planning to band together into corporations for tax purposes. A proposed regulation stated that such professional organizations must have all of the characteristics of a business corporation in order to qualify for corporation tax treatment, which would be virtually impossible for a group of professional men.

The regulation would knock out the so-called Kintner regulations of 1960 under which IRS stated that associations of professional men would be classified for tax purposes as corporations provided certain corporate characteristics were followed and provided that state law authorized establishment of the groups as corporations.

The IRS proposal is not final and will be the subject of hearings at a later date. It appears certain to be the subject of court litigation, if made final.

—A civil defense bill that has passed the House and is before the Senate. It would

provide a \$190 million program of grants to hospitals and other non-profit institutions for building fall-out shelters. These shelters could be used as garages, storage areas, etc., in peacetime.

—An Administration proposal to require clearance and approval of new medical devices, which means anything from a new type of forceps to the most complicated radiation device. FDA would rule on the efficacy as well as the safety of such devices, as it does now on new drugs.

—“Humane” treatment of laboratory animals. Most of such bills would require research institutions to provide laboratory animal care conforming to certain fixed federal standards in order to qualify for federal grants.

—An amendment to the medical education law that would forgive part of the repayment of federal loans to students if the young physician settles in a physician-shortage area.

—The American Medical Profession and the U. S. Public Health Service have joined forces in opposing a Senate-passed bill that would deprive PHS of its authority over water pollution control activities. The bill, now before the House Public Works Committee, would set up a separate organization in the HEW Department to handle this function. The AMA contends that this would subordinate the health aspects of water pollution.

—Appropriations for the National Institutes. Last year Congress cut the NIH budget request by \$12 million in approving \$918 million for NIH. This was the first time in recent years Congress has failed to substantially increase the NIH budget request of the Administration. It indicated that Congress is going to take a closer look at all federal research projects, which total some \$14 billion a year.

The AMA has pledged its aid to a Special House Committee investigating the Federal research effort. The AMA told the committee that medical research spending should not grow to the point where quality is overlooked in favor of quantity.

“Research is an investment in the future,” Dr. F. J. L. Blasingame, Executive Vice-President of AMA, said in a letter to the committee. “Properly conducted and supported by prudent expenditures, medical research, providing for his physical and social well-being, is vital to the total health security of man. . . .

“Certainly, the effort of your Committee and the review being conducted should prove helpful to the nation. We would like to aid that effect in every way that we can.”

President Johnson signed into law a bill authorizing \$95 million over the next three years to help states and local agencies combat air pollution, including that from automotive exhausts and industries.

The new law revised the old air pollution control program and made it permanent. It expands the 1955 program that provided Federal grants for co-operative research under the direction of the Secretary of Health, Education and Welfare. He was given broader authority for such research and directed to recommend remedial actions.

These remedial actions could include Federal suit for abatement of interstate air pollution. The Attorney General also could aid states in such intra-state actions if aid were asked by the governor and other state officials.

LETTER TO THE EDITORS

January 20, 1964

You ask who the four gentlemen are and what they have in common, Page 22 of OUR JOURNAL of January.

They have in common a glorious past and a future of sweet memories.

Thanks

Harvey B. Searcy, M. D.

(All due to the efforts of their colleagues.)

RESEARCH PROGRAM

Dr. Donald Pinkel, Professor of Pediatrics and Medical Director, announces that St. Jude Hospital, Memphis, Tennessee, is initiating a research program in children's nutritional and metabolic problems.

Beginning January 6, 1964 a clinic for nutritional and metabolic disorders will be held each Monday morning at 9:00 A. M. and a number of in-patient beds will be available for children requiring hospitalization.

Dr. Paulus Zee, Assistant Professor of Pediatrics, will supervise this program. Dr. Zee trained in pediatrics at Children's Mercy Hospital in Kansas City and the University of Missouri Medical Center, and recently completed four years of study in nutrition and metabolism at Tulane University.

Infants and children under age 16 with the following disorders may be accepted *ON REFERRAL OF LICENSED PHYSICIANS*:

1. Severe malnutrition
2. Lipid disorders (Gaucher's disease, Niemann-Pick's disease, lipemia)
3. Malabsorption syndromes
4. Diabetes mellitus

Since facilities are limited, physicians wishing to refer children should first contact Dr. Paulus Zee by telephone at Area Code 901, 525-8381 or by mail at this address.

There are no charges for medical or hospital care. Patients are accepted without regard to race, religion, or geographic origin.

POSTGRADUATE NUTRITION
EDUCATION

Nutrition is integral to the total management of the patient, yet the practicing physician has not availed himself of the vast amount of knowledge on nutrition in his daily practice. There are many reasons for this.

M. A. S. A.

ANNUAL SESSION

APRIL 23, 24, 25, 1964

JEFFERSON DAVIS HOTEL

The chief one is the lack of planned and properly coordinated education in clinical nutrition in medical schools.

"Some of the basic concepts of nutrition are presented in the various preclinical departments of the medical schools, such as biochemistry and physiology," the Conference on Nutrition Teaching in Medical Schools found.

"In the clinical departments and subspecialties of medicine there has been insufficient correlation of the subject matter, so that the student does not have a precise grasp of the fundamentals of nutrition and is, therefore, not able to apply modern nutritional concepts." Then, too, the literature has been scattered through the journals of a score of unrelated fields of knowledge and much research has been reported in technical publications with which the practicing physician is completely unfamiliar.

To fill the void in the area of postgraduate education in clinical nutrition, the Philadelphia County Medical Society and the State Society five years ago initiated a grass-roots nutrition education program among physicians in Pennsylvania and surrounding

areas. The program was conducted by the county society's Committee on Nutrition and Metabolism and the Commission on Metabolism and Cardiovascular Disease (formerly the Commission on Nutrition) of the Pennsylvania Medical Society. It is significant to note that only five state medical societies and twenty-six county societies (eighteen in Pennsylvania) have conducted nutrition programs, according to the American Medical Association Council on Food and Nutrition in a 1961 survey.

Our program was conducted with excellent support and co-operation from the National Vitamin Foundation in New York, a non-profit organization formed by the drug industry to support basic research and education in nutrition.

Because it is felt that our experience may be of interest to many readers of the Journal, the following is a brief summary of our Nutrition Education Program.

Methods

A panel of more than fifty nationally known physicians who are also oriented in the basic and clinical phases of nutrition was recruited to fulfill speaking engagements. This provided an opportunity for experienced clinicians to exchange with practicing physicians information on the newer concepts of nutrition as applied to the total care of the patient.

To implement the program various means have been utilized, such as individual lectures, symposia, panel discussions, a one-day institute of nutrition, and presentation of discussions on nutrition at regularly scheduled hospital staff meetings. Other organizations, such as chapters of the American Academy of General Practice, state and county medical societies, food and nutrition councils, and county dental societies also co-operated.

In addition to formal lectures on nutrition, detailed discussions during ward rounds of individual patients presenting nutritional problems were utilized to emphasize the re-

sponsibility of the physician for dietary treatment together with close observation of the patient's nutritional deficits and response to the nutritional therapy ordered.

Topics

Since nutrition permeates every field of medicine, a large variety of specific medical and dental problems of current concern to the practitioner have been offered; e.g., obesity, cardiovascular disease, gastrointestinal disorders, diabetes mellitus, alcoholism, hematological disorders, surgery, nutritional problems of pregnancy, infancy, adolescence, and aging.

Acceptance

The Nutrition Education Program has been well received by the profession and several medical organizations have requested repeat nutrition programs.

Summary

The accumulation of the basic knowledge of nutrition in recent years has made it difficult for physicians to keep abreast of progress. The aim and effort of the Nutrition Education Program has been to close the gap between the basic advances of nutrition and their clinical application by practicing physicians. By reaching the physician with current developments in the field of nutrition, he is not only made aware of nutrition as a modality of therapy, but he is better prepared to "counteract faulty diet practices urged upon the public by the faddist."

MICHAEL G. WOHL, M. D.
Chairman
Committee on Nutrition
and Metabolism,
Philadelphia County
Medical Society.

Reprinted from The Pennsylvania Medical Journal, August, 1963, Vol. 66, pages 71-72.

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STUDY OF ENVIRONMENTAL FACTORS IN STOMACH CANCER NEEDED

A study of environmental factors in stomach cancer is needed to make further inroads against this "perplexing, frustrating" disease.

This is the conclusion of Drs. M. Michael Eisenberg and Edward R. Woodward, Gainesville, Fla., who reviewed the incidence and treatment of stomach cancer in the current (November) *Archives of Surgery*, published by the American Medical Association.

Stomach cancer in the United States has been steadily declining for at least the past two and a half decades, the surgeons pointed out, and this decline is probably on a spontaneous environmental basis.

A downward trend also has been recorded in Holland, Norway and Great Britain, they said. However, they said, Finland, Japan and Iceland continue to sustain the highest rates in the world.

Although important genetic and hereditary factors cannot be completely excluded, they said, the marked variation of overall incidence of stomach cancer in different countries, the higher incidence in higher latitudes, and the inverse correlation with economic status may all represent clues to an environmental basis.

It has also been suggested that the extremely low incidence of spontaneous stomach cancer among lower animals indicates that living and environmental habits may be involved, they said.

Despite progress in surgical techniques and diagnosis, 9 out of 10 persons with stomach cancer die, the authors said.

"It would appear that our efforts need to be turned in another direction," they said. "The primary function of the physician in society is, after all, the prevention of disease."

The authors supported the proposal that, irrespective of the practical difficulties, controlled studies should be made on large groups of school children, in those countries

in which the rate of gastric malignancy is highest.

ARTICLES SUBMITTED FOR PUBLICATION

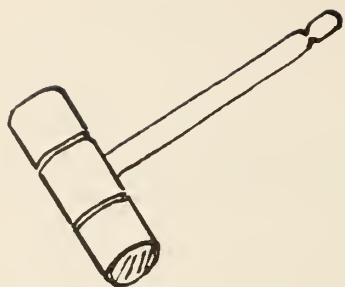
Articles submitted for publication in the *Journal* of the Medical Association of the State of Alabama should comply with the following rules:

Articles must be typewritten and double-spaced with adequate margins on both sides. The first page should list the title, name of author (or authors), degrees, and any institutional or other credits. Pages should be numbered consecutively. Tables should be typed and numbered and should have a brief descriptive title. Quotations must include full credit to both author and source, periodical references should include in order: Author's name with initials, title, periodical abbreviation, volume, and year. References should be numbered consecutively in the order in which they appear in the text. Drawings and charts should be made in black. Illustrations should be glossy photographs and should indicate placement in the text. They may be either three inches wide or six and one-quarter inches wide. The number, indication of top, and author's name should be attached to the back of each illustration. Legend should be typed, numbered, and attached to each illustration.

M. A. S. A.

ANNUAL SESSION

APRIL 23, 24, 25, 1964



President's Page



I came from a family of doctors since my father had two brothers who were physicians. However, up until I was grown, my father gave us the usual spring and fall teas as tonics, and ever so often he gave us nature's remedy tablets to purge the poisons out of us.

Many time I have suffered the tortures of the damned from being smeared with hot grease, over which red flannel saturated with turpentine was applied. This was the accepted treatment for an assumed case of the "grippe." Of course, having started life in that era, one was daresome to question paternal advice and treatment of illnesses let alone challenge or refuse to submit to them.

Maybe because of these experiences I have been more than commonly concerned about self-medication, home remedies, "they say" diagnoses, and Aunt Jane's witchcraft. It was puzzling to me, even before I thought about studying medicine, that these subjects were a topic of conversation on nearly any occasion, especially when visitors got together

at the home of the sick. But, of course, I was too young to know these things, and I would not have understood had I been told.

Out of an environment of this kind came my decision to become a doctor. It dawned on me that perhaps my doubts could be pacified somewhat if I could obtain an education in medicine and a license to practice.

All the years of my professional life have been hounded by a continuation of that same medicinal folklore with additions and substitutions to accommodate the changes in the times. It seems there is something innate in the human race that incites it to try to mend its own infirmities. This, we must admit, is a law of nature. As doctors we all know that nature, plus time, does lots to make sick people well. In order to profit most by this influence, we must be sure that people do not mess up the deal with their ignorance and lack of skill.

One of my medical college professors once told the class that there are three primary

duties we should try to discharge in our medical practices. First, we should do our best to cure the sick and repair the maimed. Second, we should utilize every known means at our disposal to prevent people from getting sick. Third, we should teach our people the proper attitude toward the total circumstances of illness. This third duty includes informing patients about quacks and charlatans, the use of patent medicine, and the danger of advertised cures. Self-medication and hearsay advice only delays or prevents the sick person from receiving the professional care he needs.

Despite my degree in medicine, I have been unable to do much about this situation because of the limited circle in which I travel, but I have tried.

Because of my concern and interest in the solution of these problems, in October, 1963, I attended the Second National Conference on Medical Quackery, which was sponsored by the American Medical Association and the Food and Drug Administration. Leaders in both of these fields discussed the question of medical quackery.

The deliberations of these two groups did not fail to reveal the types and magnitude of quackery now existing in this country as well as in the entire world. The imagination can hardly include everything some people will undertake in their efforts to sell cure-alls to the sick and helpless. These two groups agreed that this cancer on society can never be totally eliminated, but that it can be reduced to a minimum. They were unanimous in their conclusion that the solution of this problem could be reached in no better way than through proper and adequate education of the public concerning the evils of quackery in all its ramifications.

Soon after returning from the meeting mentioned above I learned that Mr. Forest E. Ludden, Director of the Division of Health Education and Information, Alabama Department of Public Health was also there. I asked him to comment on how the health departments could assist in a program to stem this cancer on society.

J. S. Dawes, M.D.



Forest E. Ludden

It is so easy for a person outside the medical profession to say that the physician should solve all the problems relating to medicine. The private practitioner should build all the hospitals, organize all medical clinics, take

care of the poor, provide the community with health facilities, be an expert witness, control all the voluntary health agencies, advise and direct the county health departments, and stem the vicious medical quacks who roam

the street selling their wares. The list of responsibilities which the public demands of the physician is endless.

On two occasions I have had the opportunity to prepare two articles on the subject of medical quackery for the *Journal*. The first appeared in the December, 1962 issue, and the other appeared in the December, 1963 issue. In both of these articles, the initiation of legislative control and educational programs was proposed as solutions to this problem.

Dr. Daves has stated that the problem is one of health education of the public. The American Medical Association, the Food and Drug Administration, the Federal Trade Commission, and the Post Office Department agree with this opinion. The question is, "How can it be done?" Certainly family physicians have a vital role. In fact they advise and teach each patient they see. However, the problem here is one of time as well as numbers. A physician can see only a limited number of people and only those who come to him on an individual basis. He certainly cannot be expected to give a concentrated, long term course in consumer health education to everyone in his community. This is especially true since his initial goals are primarily of a restorative rather than preventive nature. However, medical quackery should concern each one of you for you have spent your time, money, and sweat to achieve a reputable professional career. You are looked upon as leaders in your communities, and by your licensing and membership in the Medical Association you accept the responsibility for the public's health. From a practical standpoint the existence of medical quacks deprives you of giving proper medical care to your patients and receiving the remunerations which you are entitled to receive.

The Medical Association of the State of

Alabama, composed of individual physicians, sets the policy of the Alabama Department of Public Health. In order for this agency to lend its support in a program designed to combat and prevent medical quackery each physician must assume responsibility for it. It would seem appropriate for the Medical Association of the State of Alabama to formally endorse and promote a program designed to combat medical quackery. Local physicians should be encouraged to assist in the program. Stories should be written of the waste of time and money, the neglect of reputable care, and the maiming and crippling which result from medical quackery. These stories can best be done by local physicians citing local conditions. Exhibits and demonstrations should be prepared for county fairs with county medical societies sponsoring them.

When these basic preparations have in reality become functionally operational, the medical profession as a State Committee of Public Health may utilize the health departments in the promotion of this program. Participation by the health departments may include illustrative services, mass media techniques, reference services, in-service training, and film library services.

To summarize, the members of the Medical Association of the State of Alabama should re-enforce their position as leaders in the fight to stem medical quackery in all its forms. The health departments will be happy to assist the medical profession on a co-operative basis in curbing these treacherous practices.

These comments are offered in the hope that medical and public interest will be aroused and a program will be developed to prepare parents and their youths to be intelligent in seeking medical advice and to shun those who offer quick, sure, and lasting health or guarantee a cure for any and all ills.



around the state



This picture shows Dr. M. Vaun Adams of Mobile introducing Congressman Durward G. Hall at the American Medical Political Action Committee Breakfast in Portland. It was attended by some 300 people at 7:00 A. M. in the morning.



This picture shows Dr. John M. Chenault of Mobile receiving the ALAPAC Award in Portland, Oregon.

"The battle that American doctors have been waging against Medicare is not wasted, and is awakening the American public to the dangers of government regimented medicine."

So said Missouri's physician-Congressman, Dr. Durward Hall, at the AMPAC National Advisory Committee breakfast in Portland, Oregon Dec. 3rd. Dr. Hall, the main breakfast speaker, told a capacity audience that "just two years ago the proponents of Medi-

care were boasting about Gallup Poll figures purporting to show that a vast majority of the American people favored King-Anderson or Forand type legislation."

"Today," he said, "those figures now show that a majority of Americans are no longer deceived by fancy promises about a medical utopia under the label of Medicare."

"There is still more encouragement in the 34 Congressional polls taken this past year by members of Congress."

PROGRAM

**Annual Meeting Alabama Association of
Obstetricians and Gynecologists**

Headquarters, Ramada Inn, 1500 Govern-
ment Street, Mobile, Alabama.

Friday, March 6, 1964

- 10:00-12:30 P. M. Registration
- 12:30-1:30 P. M. Luncheon (members, guests
and wives)
- 2:00-2:30 P. M. Tumors in Pregnancy due to
Hyperluteinization—
Dr. Eugene Theriot, 3rd year Resident,
Tulane Unit Charity Hospital, Dept. Ob.
and Gyn.
- 2:30-3:00 P. M. Amniocentesis—
Dr. Patrick Flanagan, Research Fellow,
Tulane University Dept. Ob. and Gyn.
- 3:00-4:00 P. M. Severe Pelvic Infection—
Dr. Conrad G. Collins, W. R. Irby Pro-
fessor, and Chairman, Department of
Obstetrics and Gynecology, Tulane Uni-
versity School of Medicine
- 4:00-5:00 P. M. Adrenal gland as related to
Obstetrics and Gynecology—
Dr. Frank Riddick, Dept. Medicine, Ochsner
Clinic

Saturday, March 7, 1964

- 9:00-9:30 A. M. Pediatric Gynecology—
Dr. Harry B. Macey, 3rd year Resident,
Tulane Unit Charity Hospital Dept. Ob.
and Gyn.
- 9:30-10:30 A. M. Intersex and Related Ab-
normalities—
Dr. David L. Barclay, Assistant Professor,
Obstetrics and Gynecology, Tulane Uni-
versity
Meeting will honor Dr. Joe M. Weldon,
retired.
Banquet—Friday, March 6, Ramada Inn.
Seafood Supper—Saturday, March 7,
Bailey's Restaurant.

NEWS FROM MORGAN COUNTY

This is to announce that the Morgan County
Medical Society sponsored the first of three
planned feedings of the Sabin Oral Polio
Vaccine on Sunday, January 19th, under the
leadership of Dr. T. K. Lewis of Decatur. The
campaign was an excellent success, with ap-
proximately 55,000 feedings being given in 26
clinics in a period of five hours. This repre-
sented 85 per cent or better of the total county
population. The campaign in Morgan County
received complete co-operation of the civic
organizations, churches, physicians, hospitals,
schools, and many hundreds of private citi-
zens in order to be the success that it was.
The second feeding date is February 23rd,
and the third feeding will be on March 22nd.

SYMPOSIUM

A one day symposium on Gynecologic
Endocrinology and the Stein-Leventhal syn-
drome will be held in Augusta, Georgia on
Thursday, March 19, 1964. The symposium
is being sponsored by the local medical soci-
ety in conjunction with the Medical College
of Georgia. There will be no registration
fees. Among the participants will be Dr.
John Loraine of Edinburgh, Scotland, Dr.
Geoffrey Venning of London, England, and
Dr. Irving Stein of Chicago, Illinois. Dr.
William E. Barfield will moderate the morn-
ing session on "Problems of Gynecologic En-
docrinology" and Dr. Robert B. Greenblatt
the session in the afternoon on "The Stein-
Leventhal syndrome."

Your attendance is invited.

M. A. S. A.
ANNUAL SESSION

APRIL 23-24-25, 1964

JEFFERSON DAVIS HOTEL
MONTGOMERY, ALABAMA

**NEW OFFICERS ELECTED FOR COUNTY
MEDICAL SOCIETIES**

BALDWIN

President—Thomas H. Yancey, Fairhope
Vice-President—Richard A. Rowe, Foley
Secretary-Treasurer—H. W. Abrahamer,
Fairhope

BARBOUR

President—Philip Stephen Woodbury, Eufaula
Vice-President—Richard Marion Whitehurst,
Eufaula
Secretary-Treasurer—James S. Jackson, Jr.,
Clayton

BLOUNT

President—J. L. Wittmeier, Oneonta
Vice-President—Ira B. Patton, Oneonta
Secretary-Treasurer—T. M. Towns, Oneonta

BULLOCK

President—Orizaba Emfinger, Union Springs
Vice-President—Sidney Alvin Cohn, Union
Springs
Secretary-Treasurer—Gilbert E. Fisher,
Union Springs

CHAMBERS

President—N. A. Wheeler, Jr., LaFayette
Vice-President—John Horton Smith, Langdale
Secretary-Treasurer—William G. Wood, LaFayette

CHEROKEE

President—W. W. White, Centre
Vice-President—E. H. Bradley, Centre
Secretary-Treasurer—W. J. Campbell, Centre

CHILTON

President—Philip D. Foshee, Clanton
Vice-President—Harold Dumas, Clanton
Secretary-Treasurer—J. H. Johnson, Clanton

CLEBURNE

President—Richard T. Lowe, Heflin
Vice-President—F. R. Wood, Heflin
Secretary-Treasurer—Richard T. Lowe, Heflin

COLBERT

President—Loren Gary, Jr., Tuscumbia
Vice-President—Howard C. Johnson, Sheffield

Secretary-Treasurer—R. E. Harper, Tuscumbia

CONECUH

President—W. B. Turk, Evergreen
Vice-President—Cecil E. Price, Evergreen
Secretary-Treasurer—D. E. Owensby, Evergreen

CRENSHAW

President—James E. Kendricks, Luverne
Vice-President—James C. Ray, Luverne
Secretary-Treasurer—James E. Kendrick,
Luverne

CULLMAN

President—M. J. Richard, Cullman
Vice-President—J. C. Chambliss, Cullman
Secretary-Treasurer—R. B. Dodson, Cullman

ELMORE

President—J. R. Benson, Wetumpka
Secretary-Treasurer—C. S. Cotlin, Jr., Wetumpka

ESCAMBIA

President—James B. Thomas, Jr., Atmore
Vice-President—Ralph H. Rose, Flomaton
Secretary-Treasurer—Edward F. Goldsmith,
Brewton

FRANKLIN

President—John W. Tosh, Russellville
Vice-President—Aubrey E. Terry, Russellville
Secretary-Treasurer—Wayne P. Hyatt, Russellville

GREENE

President—Joe P. Smith, Eutaw
Vice-President—J. J. Bethany, Jr., Eutaw
Secretary—William H. Frederick, Eutaw
Treasurer—Rucker L. Staggers, Eutaw

HALE

President—C. E. Singleton, Greensboro
Vice-President—T. J. Anderson, Greensboro
Secretary-Treasurer—J. R. Long, Greensboro

HOUSTON

President—Ben R. Byrd, Dothan
Vice-President—Gordon A. Atkinson, Dothan
Secretary-Treasurer—Jesse L. Byrd, Dothan

AROUND THE STATE

JEFFERSON

President—Benjamin M. Carraway, Birmingham

President-Elect—William E. Lawrence, Birmingham

Vice-President—Charles W. Neville, Birmingham

Secretary-Treasurer—Hal Ferguson, Birmingham

LAMAR

President—C. E. Smith, Vernon

Vice-President—W. C. Box, Sulligent

Secretary-Treasurer—W. H. Wright, Sulligent

LEE

President—J. C. Meadows, Jr., Opelika

Vice-President—Kenneth D. Strother, Opelika

Secretary-Treasurer—F. Bernard Schultz, Auburn

LOWNDES

President—W. L. Staggers, Benton

Secretary-Treasurer—R. P. Griffin, Fort Deposit

MARSHALL

President—Neil E. Christopher, Guntersville

Vice-President—Ellis F. Porch, Arab

Secretary-Treasurer—Francis N. Calvert, Boaz

MOBILE

President—Daniel F. Sullivan, Mobile

President-Elect—William L. Sellers, Jr., Mobile

Secretary—Neal S. Flowers, Mobile

Treasurer—William P. Coats, Chickasaw

MONTGOMERY

President—Paul D. Everest, Montgomery

Vice-President—Harry J. Till, Montgomery

Secretary-Treasurer—William L. Smith, Montgomery

PERRY

President—A. F. Wilkerson, Marion

Vice-President—J. R. Dawson, Marion

Secretary-Treasurer—J. R. Long, Marion

PIKE

President—J. A. Brantley, Troy

Vice-President—J. O. Colley, Jr., Troy

Secretary—W. H. Abernethy, Troy

Treasurer—C. L. Golden, Brundidge

TALLAPOOSA

President—Lewis M. Lamberth, Alexander City

Vice-President—James P. Temple, Alexander City

Secretary-Treasurer—L. H. Hamner, Camp Hill

WASHINGTON

President—Herman Patterson, Chatom

Vice-President—Paul Petcher, Chatom

Secretary-Treasurer—J. L. Hubbard, Jr., Chatom

CADUCEUS CLUB

Dr. Robert S. Hogan, chairman of the Development Committee of the Caduceus Club of the Medical College of Alabama, announced at the December Faculty Meeting of the Medical College of Alabama that the initial steps had been taken in the establishment of the Caduceus Club. Dr. Edwin Waldrop, president of the Medical Alumni, reported that he had appointed Dr. Hogan to spearhead the establishment of this support group dedicated to assisting in the program of continuing medical education to practicing physicians throughout the state and to the upgrading of the facilities at the Medical College itself.

Dr. Hogan pointed out that such needs are being met extraordinarily well in other states by a strong backing of alumni and other interested persons through such organizations as the Caduceus Club. Membership in the Club is to be limited to those who contribute one hundred dollars annually, and expenditures will be controlled by the membership through an elected Board of Trustees, as expressed in the by-laws. At the time of the announcement, Dr. Hogan pointed out that copies of the by-laws would be mailed to all alumni in the near future, but he emphasized that membership would be open to others interested in the advancement of medical education in the State. He mentioned

that many non-alumni physicians had already registered much interest in the organization.

Dean S. R. Hill acknowledged with gratitude the efforts of the Caduceus Club to support the upgrading of medical education, with particular respect toward disseminating newer knowledge and techniques to practicing physicians throughout the state. He indicated the desire of the School to show recognition to members of the Club.

Dr. Hogan reported that a sub-committee, headed by Dr. Ernest Campbell, was working on arrangements for the initial Black Tie Dinner, honoring the Charter Membership, and he announced that the Black Tie Dinner will be an important annual occasion.

AMERICAN COLLEGE OF PHYSICIANS

Dr. Walter B. Frommeyer, Jr., Governor of the American College of Physicians for Alabama, has announced that the following physicians were elected to Fellowship in the American College of Physicians by the Regents of the College as the result of the action taken by the Credentials Committee of the American College of Physicians, which met in Philadelphia, Pennsylvania on November 6, 7, 8, 1963:

Dr. E. E. Eddleman, Professor of Medicine, Department of Medicine, Medical College of Alabama (and) Associate Chief of Staff for Research and Education, Birmingham Veterans Administration Hospital, Birmingham, Alabama.

Dr. Jean McNeil Morgan, (formerly) Assistant Professor of Medicine, Medical College of Alabama (and now), Associate Professor of Medicine, Medical College of South Carolina, Charleston, South Carolina.

Dr. Maxwell Moody, Jr., (former) President and Chairman of the Board of the Alabama Heart Association, Tuscaloosa, Alabama.

Dr. Buris R. Boshell, Associate Professor of Medicine, Medical College of Alabama

(and) Assistant Director, Department of Medicine, Medical College of Alabama (and) Chief, Medical Service, Birmingham Veterans Administration Hospital, Birmingham, Alabama.

The following physicians were elected to Associate membership in the American College of Physicians and will subsequently be eligible for advancement to full Fellowship status in the College:

Dr. Thomas M. Davis, Jr., Clinical Assistant Professor of Medicine, Medical College of Alabama, Birmingham, Alabama.

Dr. Robert H. Lokey, Anniston Alabama.

Dr. James T. Montgomery, Chief of Staff, Holy Family Hospital, Birmingham, Alabama.

Dr. Constance S. Pittman, Assistant Professor of Medicine, Medical College of Alabama (and) Clinical Investigator, Medical Service, Birmingham Veterans Administration Hospital, Birmingham, Alabama.

Dr. Joseph E. Welden, Clinical Assistant Professor of Medicine, Medical College of Alabama, Birmingham, Alabama.

TEACHING SEMINAR

International Academy of Proctology Sixteenth Annual Teaching Seminar, Deauville Hotel, Miami Beach, Florida, February 29-March 5, 1964, Jacob Reichert, M. D., President; and Donald C. Collins, M. D., General Convention and Program Chairman.

OPHTHALMOLOGY AND OTOLARYNGOLOGY

The annual meeting of The Georgia Society of Ophthalmology and Otolaryngology will be held March 19, 20 and 21, 1964 at Callaway Gardens, Pine Mountain, Ga.

The guest Eye speakers will be Dr. Irving H. Leopold, Philadelphia, Pa., Dr. John McLean, New York, N. Y. and Dr. M. A. Galin, New York, N. Y. The guest ENT speakers will be Dr. Walter P. Work, Ann Arbor, Michigan, Dr. George Reed, Boston, Mass. and Dr. Jack V. Hough, Oklahoma City, Okla.



BOOK REVIEWS

Essentials of Pediatric Psychiatry: By Meyer, Levitt, Falick and Rubenstein. Cloth. Pp. 208. Appleton-Century-Crofts, 1962.

This small volume of 208 pages provides the pediatrician with much that was omitted during his training concerning the psychological aspects of his patients. Many physicians would expect verbosity, a new-to-them vocabulary, and a "way-out" interpretation of the subject. The authors state that their purpose in presenting this book is to help solve such a problem of communication between the child psychiatrist and the pediatrician and to help the latter understand the mental and emotional workings of his small patients. This they do admirably. The authors apparently have a much greater understanding of pediatrics and pediatricians than does the child specialist have of psychiatrists.

The divisions of the book follow a logical developmental pattern. Psychic development from infancy to adolescence forms the foundation for later discussions of normal development and its problems in infancy and childhood, the emotional reactions to trauma and hospitalization and these in turn provide the basis for consideration of serious disorders of development. It is this latter category of symptoms which involves a large number of patients who have tics, stuttering, speech difficulties, obesity, phobias, etc. . . . An understanding of psychological aspects of children having these difficulties is of benefit to the physician consulted. The final two chapters are concerned with brain damaged and mentally defective children and with the diagnosis and treatment of psychiatric disorders.

The authors do not intend this book to make the pediatrician into a child psychiatrist; nor does the final chapter on diagnosis and treatment urge the pediatrician to undertake psychoanalytic therapy. After studying only 205 pages of text, the pediatrician or general practitioner should have a greater understanding of the psychological values in health and illness, at various ages, under stress and hospitalization, have a better understanding of

the psychological ramifications connected with epilepsy and the brain damaged child, and an awareness of when to refer his patient to that rarest of physicians—the excellent child psychiatrist.

W. A. Daniel, Jr., M. D.

Moving into Manhood: By W. W. Bauer, M. D., Cloth. Price \$2.95. Pp. 107. Doubleday & Co., Garden City, New York, 1963.

In 102 pages Dr. Bauer covers sex education for boys very thoroughly. The chapters are: You're Almost a Man, Girls Are Growing Up Too, Boys and Girls Together, How to Be a Man, Various Problems in a Young Man's Life, Where Can a Boy Go for Help, How Your Life Began, and A Partner for Marriage.

It was felt that an average 14 year old boy should read the book and give his reactions. This was done, and the following is the report:

"I think that all young men should know something about how he was born and how to live properly. This book outlined to me the basic facts about how to grow up properly, about the miracle of birth and about the sexes. I think, however, that a simpler book should be issued to a boy when he is about nine or ten years old, as this one was rather hard to understand. Then, when he is 13 or 14 he starts noticing girls, liking them, and wanting to be with them. He should understand that they have some problems too. He should know where to go for help for his own problems. This book helped me to see this subject more clearly, and I think other boys my age should have a chance to read it."

Pretty good endorsement! However, it should be noted that the book is definitely for the teenager who has already begun to be interested in the subject and not for the prepubertal boy as a preparation for adolescence.

W. A. Daniel, Jr., M. D.



Alabama Department of Public Health



T O

C H A N G E

A

H E A D I N G

For several years the Alabama Department of Public Health has been using its standard heading of a test tube rack for its articles in *The Journal of the Medical Association of the State of Alabama*. The laboratories provide a major service to physicians and the people of Alabama; however, it was thought that this heading should be more inclusive and depict the activities of the department as a whole. Therefore, the concept of two seals—the State Seal and the Seal of the Medical Association—with the words “Alabama Department of Public Health” centered between the two was agreed upon. This heading would signify the fact that the department is a state agency, but its policies and procedures are governed by the Medical Association of the State of Alabama acting as the State Board of Health.

Changing the heading appeared to be a simple matter of drawing a couple of illustrations and making a new cut. However, the new design of this heading brought forth a question. Which of the seals being used by the Medical Association is the official seal? The State Health Officer had observed that the Medical Association seal used by

this department on certain official documents is different from the seal used on publications of the Medical Association. One of the seals has a single eagle perched upon a shield holding a scroll in his beak. On the scroll are inscribed the words “Here We Rest.” The other seal has two eagles supporting a shield on which appear flags of the five governments which have held sovereignty over the state. The crest is an old sailing vessel. Which of these two seals is the official one? Why have both been in use?



DEPARTMENT OF HEALTH



A study of the Constitution of the Medical Association revealed that the seal has two sides, the obverse and the reverse. The design on the obverse, or main printing side of the seal, is a "winged globe with the inscription *Nos etiam speravimus meliora.*" In practice this side of the seal, the main printing side, is seen rarely and may not be recognizable to younger physicians. The reverse side of the seal should be the arms of the state plus the inscription "The Medical Association of the State of Alabama 1873." This seal is presently used on official documents.

Before 1939 the state had no official arms. Not being able to fulfill the requirements of the constitution concerning the reverse of the Medical Association seal, the medical society substituted what was then the state seal. This outmoded seal has an interesting history. It was designed and adopted by the "carpet-bag" legislature of reconstruction days who wanted to brand the people of Alabama with a United States emblem. The single eagle on a shield remained the state seal from its adoption in 1868 until the legislature restored the original Alabama Great Seal in 1939.

What seemed to be a simple change turned out to be a small research project. With the able assistance and co-operation of the Medical Association staff, we have attempted to place the proper seals on each side of our name.

Alabama State Emblems, Alabama State Department of Archives and History.

Physicians Handbook, The Medical Association of the State of Alabama, 1962.

The Book of the Rules, The Medical Association of the State of Alabama, 1889.

BUREAU OF LABORATORIES

Thomas S. Hosty, Ph.D., Director

December 1963

Examinations for intestinal parasites.....	365
Typhoid cultures (blood, feces, urine and other).....	156
Brucella cultures.....	0
Examinations for malaria.....	0
Examinations for gonococci.....	1,352
Serologic tests for syphilis (blood and spinal fluid).....	18,906
Darkfield examinations.....	2
Agglutination tests.....	1
Examinations for diphtheria bacilli and Vincent's.....	15
Complement Fixation tests.....	38
Examinations for Negri bodies (smears and animal inoculations).....	180
Water examinations.....	1,767
Milk and Dairy Products examinations.....	3,612
Examinations for tubercle bacilli.....	2,989
Miscellaneous examinations.....	4,988
	<hr/> 34,371*

* Dothan Branch Laboratory report not received in time to be included in this report.

BUREAU OF PREVENTABLE DISEASES

W. H. Y. Smith, M. D., Director

CURRENT MORBIDITY STATISTICS

1963

	Nov.	Dec.	*E. E. Dec.
Tuberculosis	120	66	121
Syphilis	117	100	101
Gonorrhea	353	239	262
Chancroid	5	2	2
Typhoid fever.....	0	0	3
Undulant fever.....	1	0	0
Amebic dysentery.....	8	1	2
Scarlet fever and strep. throat.....	122	62	80
Diphtheria	2	1	15
Whooping cough.....	15	10	17
Meningitis	6	8	8
Tularemia	0	0	0
Tetanus	3	1	1
Poliomyelitis	5	0	5
Encephalitis	0	0	0
Smallpox	0	0	0
Measles	7	8	77
Chickenpox	30	37	98
Mumps	174	26	84
Infectious hepatitis.....	46	23	32
Typhus fever.....	0	0	0
Malaria	0	0	0
Cancer	431	781	444
Pellagra	0	1	0
Rheumatic fever.....	17	8	13
Rheumatic heart.....	25	15	23
Influenza	62	136	119
Pneumonia	206	256	219
Rabies—Human cases.....	0	0	0
Pos. animal heads	2	0	0

As reported by physicians and including deaths not reported as cases.

*E. E.—The estimated expectancy represents the median incidence of the past nine years.

OBITUARIES

MOORE—Dr. Ernest Griffin Moore, a general practitioner in Tallassee, Alabama died on December 27, 1963 at the age of 57.

Dr. Moore was a native of Gosport in Clarke County, son of Mrs. W. F. Moore of Gosport, and the late W. F. Moore.

He attended the University of Alabama, but graduated from Louisiana State University in 1933. He interned at Charity Hospital in New Orleans.

Dr. Moore was a member of the Methodist Church, a vice-president of the Tukabatchee Area Boy Scout Council and chairman for several years of that organization's extension committee. He was a member of the Elmore

County Medical Association, the Medical Association of the State of Alabama, the Southern Medical Association, the Alabama Chapter of the American Academy of General Practice, and the American Medical Association.

Dr. Moore is survived by his Mother, Mrs. W. F. Moore; his wife, Mrs. Myrtice Patterson Moore; a son, Ernest Griffin Moore, Jr., Birmingham; a daughter, Mrs. Robert S. Holabaugh, Philadelphia, Pennsylvania; two sisters, Mrs. Cobb Cammack and Mrs. Don Wiggins, Gosport; four brothers, Bobby Moore and J. B. Moore, Gosport; Willie Moore, Houston and S. S. Moore, Mobile; and one grandson, Steve Moore.

STABLER—Dr. Lorenzo Vastine Stabler, a native of Lowndes County, died in Greenville, Alabama on January 15, 1964 after a long illness.

Dr. Stabler was educated in the public schools and was a graduate of the Vanderbilt University School of Medicine in 1896. He practiced medicine for 65 years.

Dr. Stabler moved to Butler County almost 50 years ago and opened Stabler's Infirmary in 1916. In 1961, his sons, Dr. E. V. Stabler and Dr. A. A. Stabler, both members of the Board of the Hospital, changed the name of

the non-profit corporation to the L. V. Stabler Memorial Hospital in honor of their father.

Dr. Stabler was a charter member of the Greenville Rotary Club and a Master Mason. He was a life member of the Board of Stewards of the First Methodist Church and a church lay leader.

He was a fellow of the American College of Surgeons, a member of the Butler County Medical Society, the Medical Association of the State of Alabama, the Southern Medical Association, and the American Medical Association.

The Woman's Auxiliary

Dear Doctors:

It is an honor and privilege to be asked to guest-write the Auxiliary page this month, and since it is near the Valentine season, it seems appropriate to "speak to you of love"—the love of the Auxiliary for the Medical Association. As one of our past presidents aptly put it, "We all love a doctor, but not the same one." For 40 years, the Auxiliary has existed for the primary purpose of assisting the Association, and the reason for this is that we love the Association and its members.

Though we reserve the right as helpmates to criticize constructively now and then, we are really deeply interested, both individually and collectively, in the aims and activities of the Association. We are justly proud of the accomplishments of the profession in Alabama, and particularly of the rich and unique heritage of responsibility for the health of the people of this state, as carried out under the laws which so wisely designate the MASA as the State Board of Health. And we rise in righteous indignation to the defense of free medicine when we hear those who would belittle its advances and would advocate its limitation through government subsidy and control.

Although each doctor's wife has this same feeling for the accomplishments and problems of her own husband, it is only through Auxiliary membership that we can be fully aware of the total picture of medical practice as it exists today in our nation, that we can realize the threats and dangers that beset it on every side, that we can learn what is being and can be done to offset these attacks, that we can gain the feeling that we are not alone but are joined by 85,000 other women in every state of the union, all of whom have similar interests, ideals, and objectives.

The question, "Is your wife a busy woman?" can have but one answer, "Em-

phatically YES." Most doctors' wives have more than their share of opportunities for community service, and they have traditionally shouldered their responsibilities with the joy that comes of knowing they are needed and that they are making a contribution to the area which is "home." Because of the multiplicity of tasks, each woman must choose those things which are attractive and meaningful to her; each doctor's wife must decide to which groups she will give active support, which she will favor by token membership, and which she will leave to someone else.

At last count, 1366 physicians' wives in Alabama had chosen Auxiliary membership. However, there are more than 2,000 members of the Association, so there are still several hundred eligible women who have not made this choice. What has been *your* wife's decision in this regard?

In return for the labors of love which the Auxiliary has offered to the Association over the years, will you give us—and your wife—a little Valentine present? If you believe the Auxiliary is a potent force on behalf of medicine as we know and love it, will you tell your wife "Thank you" for her Auxiliary membership? And if she is not yet a member, let her know that you would appreciate her joining with the wives of other physicians in Alabama, and across the nation, as they stand side by side with their husbands for the preservation of those things which we value in medical practice and in our beloved country.

Sincerely yours,

Belle M. Chenault

(Mrs. John)

First Vice President and Membership
Chairman, Woman's Auxiliary to the
American Medical Association

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THE MANAGEMENT OF CHOLECYSTITIS AND CHOLELITHIASIS

**A Review of 540 Consecutive Cases at
Carraway Methodist Hospital
Birmingham, Alabama**

BENJAMIN M. CARRAWAY, M. D., F. A. C. S.—ERNEST S. CAMPBELL, M. D.

Approximately ten per cent of the population of this country will be found to have cholelithiasis. This figure is obtained by projection of review of hospital admissions and analysis of autopsy data. Gallstones are found mainly in the white population, seen much more frequently in females in the fifth and sixth decades and quite rare in patients who are under 10 years of age.¹ Cholecystectomy has become the second most frequently performed abdominal operation, exceeded in frequency only by laparotomy for removal of the appendix. In the elderly patient it is the most frequently performed abdominal operation. The mortality rate for cholecystectomy at the turn of the century was over ten per cent, the mortality rate now ranging in all cases from one per cent to three per cent. This marked reduction has been brought about by several factors, pri-

marily due to better methods of diagnosis, more adequate and careful preoperative preparation of the patient, modern anesthesia and improved operating room technique and postoperative care. The increase in the number of cholecystectomies performed is also the result of the realization of the significance of gallstones in the production of severe symptoms and/or complications the longer the patient harbors the gallstones. Cancer of the gallbladder develops in from .5 per cent to one per cent of the cases where the cholelithiasis is long standing. Approximately 70 per cent to 80 per cent of these gallbladders contain stones.²

The mortality rate for cholecystectomy varies considerably according to the hospital reporting, according to whether it is an emergency operation or whether it is an elective procedure performed upon subsidence

of symptoms. An increase in mortality is noted in those patients with exploration of the common duct in association with the cholecystectomy; in the patient who is operated upon in the acute phase; and in the patient who is over the age of 50. Older patients with associated disease states show a marked increase in the mortality rate. It is this discrepancy between the lower mortality rate following elective surgery and the relatively high mortality rate following surgery performed in the acute stage of inflammation of the gallbladder that we would like to discuss. Approximately 15 per cent to 20 per cent of all patients with cholecystitis will be seen initially in the acute stage. If operated upon as an urgent or an emergency operation, the mortality rate ranges from 1.6 per cent in Glenn's series to 3.6 per cent in the series reported by Adams and Stranahan.³ In a series of 345 patients with acute cholecystitis reported by McCubbrey and Thieme, there was only one death in 280 cases treated conservatively, whereas there were eight deaths in the 65 patients upon whom an early operation was performed. In their series, rupture of the gallbladder occurred four times and a pericholecystic abscess with peritonitis occurred six times with no effect on the mortality rate.⁴

Early operation accepts the hazards of surgery without adequate preparation of the patient; while it offers a substantial reduction in the hospital stay. At the same time a patient is being operated upon in most instances without a confirmed diagnosis. Conservative therapy accepts the possible dangers of gallbladder rupture, gangrene and pericholecystic abscess with generalized peritonitis, and relies heavily upon the metabolic and biochemical rehabilitation of an extremely ill patient by vigorously treating

acute cholecystitis, rather than watchful waiting. There is also a rather significant danger of common duct damage with an early operation in the patient in whom the anatomy about the porta hepatis is obscured by the acute process.⁵

It is felt that in acute cholecystitis, if treated conservatively and vigorously according to the individual requirements of each case, there will result a considerable diminution in the mortality rate and the complication rate. Rigid adherence to a rule of thumb treatment regimen is to be deplored and every case should be managed according to its particular problems and progression of symptoms.

The conservative method of management of acute cholecystitis has been preferred in this institution. For these reasons we felt that it would be of value for us to review our experiences with surgery of the biliary tract. An analysis has been performed of the clinical records of 540 patients operated upon for disease of the biliary tract in the 11 year period from 1951 to 1961 inclusive.

Material

All of the patients were operated upon by the surgical and resident staff of the hospital. There were 496 white patients and 44 colored patients. There were 450 females and 90 males, a ratio of five to one. The males averaged 10.9 years older than the females, the peak instance in the females being in the fifth decade and that of the males in the sixth decade. The youngest patient was 19 years of age, the oldest 87 years of age. There were 115 patients over the age of 60 in this group. There were only six colored males in the entire group (Table I).

Table I
TOTAL PATIENTS BY AGE, COLOR AND SEX

	Total	10-20	21-30	31-40	41-50	51-60	61-70	71-80	81-90
White Female	412	7	39	81	115	93	56	19	2
White Male	84	0	2	5	22	22	23	9	1
Colored Female	38	1	4	7	14	8	3	0	0
Colored Male	6	0	0	0	4	0	2	0	0

Clinical Data

The most common symptom found was that of pain and this was noted in 489 patients or 90.5 per cent. None of the 51 patients who presented without pain had a normal gallbladder. Six of these patients without pain were found to have chronic cholecystitis without stones; five of them had acute or subacute cholecystitis without stones. There were two strictures of the common bile duct, one adenocarcinoma of the common bile duct, one pyloric stenosis and one cancer of the head of the pancreas and one adenocarcinoma of the colon; none of whom complained of pain. The remaining 40 patients were found to have chronic cholecystitis with cholelithiasis.

Nausea and vomiting was the next most frequent complaint in this group, occurring in 288 patients or 52.9 per cent of the patients. It was a prominent symptom in patients with common duct stones, occurring in 62.9 per cent of these patients.

Indigestion and intolerance to foods was described in 163 patients for a percentage of 30.1 per cent.

Fever was present in 34 patients, or 6.3 per cent of the entire group. It was a fairly ominous sign, however, in that acute and subacute cholecystitis was present in nine of these cases; common duct stones in five; hepatitis in two; pancreatitis in one and adenocarcinoma of the common bile duct; adenocarcinoma of the pancreas; adenocarcinoma of the gallbladder and Boeck's sarcoid were present in one each.

Jaundice or a history of jaundice was present in 65 patients, or 12 per cent of the entire group. At operation 44 of these patients were jaundiced, 32 of whom the common duct was explored. Four of these patients underwent liver biopsy in addition to the cholecystectomy.

Abdominal tenderness on physical examination was noted in 346 patients or 64.1 per cent of the entire group. This finding appeared to be rather nonspecific, however, in differentiating acute cholecystitis from the chronic variety.

Clinical obesity was noted in 121 patients, a percentage of 22.4 per cent, in whom there were 13 complications for a percentage of 23.6 per cent. The white blood cell count was recorded in 503 cases and found to be over 10,000 in 127 cases. Acute or subacute cholecystitis was found in 30 of this group with an elevated white blood cell count for a percentage of 33.8 per cent, whereas 53 cases of acute or subacute cholecystitis were noted in the group exhibiting a white blood cell count below 10,000 for a percentage of 14.1 per cent.

X-ray examination in the form of a cholecystogram, an I. V. cholangiogram, a flat plate or an I. V. pyelogram was performed in 380 cases or 70.3 per cent of the entire group. Calculi were reported in 252 patients. Two hundred and twenty-eight of these patients were found to have stones at operation for a percentage of 90.5. Nonfunction of the gallbladder was reported in 116 cases, calculi subsequently being found at operation in 103 cases or 88.8 per cent of the entire group. Eleven patients were operated upon in spite of normal X-ray findings and calculi were found at operation in eight of these. In the 160 patients in whom no X-ray examination was performed, calculi were found at operation in 137 or 85.6 per cent.

Comment

Nine out of ten patients exhibited pain in this series of patients. In most instances this pain was fairly typical of that found in biliary tract disease, being located in the epigastrium or just to the right of the epigastrium under the right costal margin, and being typically colicky in nature. In those patients in whom the pain radiated, it was usually found radiating through to the back and under the right scapula. However, this did not hold true in all cases and in some the pain was rather atypical. It is of interest to note that the absence of pain in no way rules out serious disease of the biliary tract.

As had been noted in other published series,¹¹ fever is not a common symptom of

chronic cholecystitis and cholelithiasis and, when present, usually indicates a complication of cholelithiasis or some other more ominous disease process. Nausea and vomiting was found to be a rather nonspecific symptom in this series (Table II).

Table II
FIRST SYMPTOMS AND SIGNS OF
CHOLECYSTITIS AND CHOLELITHIASIS

Symptoms	\bar{n}	%
Pain	489	90.5%
Nausea and Vomiting	288	52.9%
Indigestion	163	30.1%
Obesity	121	22.4%
Tenderness	346	64.1%
Jaundice	65	12.0%
Fever	34	6.3%
Elevated WBC	127	25.2%

Very few patients were found to have no calculi in the gallbladder after this condition had been indicated by X-ray examination. A report of a nonfunctioning gallbladder on X-ray in a patient who has persistent biliary symptoms is a reliable indication of cholelithiasis in high percentage of the cases. Eight of 11 X-rays reported as normal later proved to exhibit calculi at operation, thus indicating that a normal cholecystogram does not rule out the presence of calculi.

Operative Findings

Histologic examination was performed on the gallbladder in each case of cholecystectomy and a pathological diagnosis was made (Table III). In 46 patients the pathological diagnosis was acute cholecystitis. Only three of these patients were without stones. Forty-two patients were diagnosed pathologically as having subacute cholecystitis, only one of these being without stones. Preoperatively these two groups were indistinguishable clinically and at operation few distinctive features could be found to separate them. Chronic cholecystitis was found in 443 patients and 45 of these were found to be without stones. Carcinoma of the biliary tract was found in three patients, two of whom had carcinoma of the gallbladder and one with a carcinoma of the common bile duct. A mucocele of the gallbladder was reported in one. This patient also exhibited calculi. Cholesterosis was reported in two patients and only three patients were reported to have a normal gallbladder. One of these was a cholecystectomy after a gunshot wound in the right upper quadrant, another was reported as having adhesions on the serosal surface and the other was reported as a papilloma by X-ray with no mucosal lesion being noted on pathological examination. An interesting note was that the surgeon described

TABLE III
OPERATIVE FINDINGS ON 540 PATIENTS, 1951-1961

Findings:	Number	Per Cent
Chronic Cholecystitis with stones	398	73.7
Chronic Cholecystitis without stones	45	8.3
Subacute Cholecystitis with stones	41	7.6
Subacute Cholecystitis without stones	1	0.18
Acute Cholecystitis with stones	43	7.9
Acute Cholecystitis without stones	3	0.55
Mucocele of gall bladder	1	0.18
Carcinoma of gall bladder	2	0.37
Cholesterolosis	2	0.37
Carcinoma of common bile duct	1	0.18
Normal gall bladder	3	0.55
	540	
Gunshot wound	1	
Adhesions	1	
Papilloma by X-ray (missed)	1	

the gallbladder as being acute in 78 cases, whereas the pathological examination revealed an acute gallbladder in only 55.5 per cent of this group. In the 462 cases that the surgeons described as being chronic, however, he was correct in 90.3 per cent of the cases.

Other conditions which were found at operation and, in most instances treated, included 13 cases of hiatus hernia; 12 cases of duodenal ulcer; acute and chronic pancreatitis, six cases each; abdominal hernia, 13 cases; acute hepatitis, four cases; duodenal obstruction, four cases; diverticulosis of the colon in three cases; pseudocyst of the pancreas in four cases; portal cirrhosis in four cases; sigmoid diverticulitis in three cases; carcinoma of the colon in two cases; gastric ulcer, two cases; carcinoma of the stomach in one case; marginal ulcer in one case; biliary cirrhosis in two cases, and one case of Meckel's diverticulum. There was one case of carcinoma of the head of the pancreas. Some cardiovascular abnormality was present in 28 cases. Diabetes was present in 12 cases and lues was present in five cases. All of these associated conditions should be intensively investigated prior to operation and brought under some semblance of control.

It is interesting to note that there were no stones in nine per cent of the entire group. This figure is further reduced when it is considered that 17 of these patients had had prior cholecystostomies and one had had a prior partial cholecystectomy for gallbladder disease.

No spontaneous biliary fistulas involving the gallbladder to the gastrointestinal tract were found in this group of patients. The importance of a good abdominal exploration at the time of surgery is brought out by the fact that two cases of unsuspected carcinoma of colon were found in addition to the unsuspected case of carcinoma of the common bile duct, and the unsuspected case of carcinoma of the head of the pancreas. The two cases of carcinoma of the gallbladder were operated upon for chronic cholecystitis and cholelithiasis and were again unsuspected. In the case with the carcinoma of the stomach, the diag-

nosis was made preoperatively. Spasm of the sphincter of Oddi or stricture of the common bile duct was present in nine cases, indicating the frequency with which this condition may be present with biliary tract disease.

Acute Cholecystitis

A preoperative diagnosis of acute cholecystitis was made in 326 patients in this series. Two hundred and eighty-two of these patients were treated conservatively for a period of at least one week prior to operation. Most of them were discharged from the hospital and brought back in a period of four to six weeks for elective surgery. The remaining 44 were operated upon in the acute phase, either because of the surgeon's preference for early operation or because of rapid progression of symptoms, or evidence of rupture or impending rupture of the gallbladder. Pathological examination in 88 of these cases revealed either acute or subacute cholecystitis or 23.9 per cent of the group preoperatively diagnosed as having acute cholecystitis. The average age of the group was 51.8 years with approximately equal distribution of males and females. The typical clinical picture of pain, tenderness, nausea and vomiting, elevated white blood count and muscle spasm was seen in that order of frequency; whereas fever was not a very prominent manifestation, being found in only eight cases. Jaundice was present in ten cases and common duct stones present in six. There were two cases of associated pancreatitis.

The conservative management of acute cholecystitis consists of an intensive and vigorous medical regimen directed toward restoration of the patient's biochemical and physiologic derangements consequent to the acute inflammatory reaction of the gallbladder, individualizing each patient and carefully observing the patient for evidence of progression of the symptoms, especially at the end of 12 to 24 hours. If at this time he has not improved or is getting worse, then im-

mediate surgery is advised. However, biliary surgery is never done as an emergency operation but is always scheduled in the operating room on a regular operating day with a full staff of nurses, anesthetists and assistants present.

Table IV

MANAGEMENT OF ACUTE CHOLECYSTITIS

1. Complete bed rest with ice cap to right upper quadrant.
2. Nothing by mouth, or surgical liquids.
3. Sedation in large doses (Demerol®).
4. Atropine sulfate (large doses).
5. Aqueous penicillin, streptomycin, or other antibiotics (large doses).
6. Correct any electrolyte imbalance by intravenous fluids.
7. Gastric suction, if distended.
8. Oxygen, if indicated.
9. If jaundiced, prothrombin time and give Vitamin K.
10. If associated diseases are found, medical consultation is obtained.

An outline of a suggested conservative medical management regimen is presented in Table IV. It will be noted that the prime objectives are in placing the patient, the gallbladder and the G. I. tract at rest, providing analgesia and sedation, and large doses of antibiotics, along with ancillary measures, such as oxygen and parenteral vitamin K as needed. Any complicating medical conditions are treated when found. This medical regimen will succeed in obtaining a successful remission of the acute episode in about 86.5 per cent of the cases.⁷ This percentage compares quite favorably with other figures reported.^{4,7}

If, however, the patient requires an operation, it is most important in the acute case to have the proper preoperative medication, good anesthesia, complete relaxation, good exposure and at least two assistants. If the abdomen is free of pus and the anatomy is not distorted, a cholecystectomy is performed and an abdominal exploration is carried out.

Skill, experience and good surgical judgment are prerequisites in the proper management of the many problems that may present themselves. If it is elected to do a cholecystectomy, then all structures should be identified, carefully dissected and individually ligated. The common duct should be explored if there is some specific indication present. Most often, however, one will find a stone impacted in the cystic duct rather than in the biliary tree.

A cholecystostomy should be performed if the tissues are inflamed, edematous or if abscess is present so that the structures cannot be identified. In any event, the gallbladder bed should always be drained with the drain placed along the gallbladder bed into the foramen of Winslow. A cholecystostomy may also be the procedure of choice if the patient is seriously ill, moribund, elderly or a poor surgical risk. If an abscess is diagnosed before the operation, by symptoms and physical findings, then it can be drained under local anesthesia and the patient given intensive vigorous medical therapy.

The Chronic or Post-Acute Elective Cholecystectomy

This is usually when a patient has had an acute attack and was managed conservatively, and returns for a cholecystectomy at an elective date, usually one week to three months later. An elective cholecystectomy is also performed for chronic disease when repeated X-rays show nonfunctioning gallbladder; when patients have frequent attacks of cholecystitis with numerous admissions to the hospital; when gallstones are found on X-ray in routine physical examinations; and when gallstones are found on exploring the abdomen at other operations, such as in pelvic surgery. At this time the patient has been given an opportunity to recover from his acute episode of cholecystitis, and all associated diseases have been investigated, such as peptic ulcer, hiatus hernia, diverticulitis and diverticulosis of the colon, pancreatic disease, cardiac disease, pleurisy, pneumonia and carcinoma of the stomach or

colon. If obese, patients should be reduced in weight. The patient should be in good state of nutrition and hydration with adequate control of any infection, if present. In 282 patients who had post-acute elective operations, there were 33 postoperative complications for a percentage of 11.7 per cent; one operative complication for a percentage of 0.35 per cent and seven deaths for a percentage of 2.5 per cent. If these post-acute elective cases are combined with the elective chronic cholecystectomies, then the postoperative complications amount to a total of 45 with a percentage of 9.6 per cent and the mortality rate is reduced to 1.4 per cent. This compares very favorably to the complication rate in the emergency acute operation in which the operative complication is 2.2 per cent; postoperative complications are 22.7 per cent and the mortality rate is 4.54 per cent. These figures agree essentially with those reported in the literature.^{4,7,8}

It is interesting to note that one of the surgeons in the group performed 242 cholecystectomies in the 11 year period with only one death. All of his cases were post-acute elective with a mortality rate of 0.35 per cent and a postoperative complication rate of 5.8 per cent (Table V).

Exploration of the Common Duct

The common duct was explored in 74 cases or 13.7 per cent of the total. This compares with the 10.4 per cent reported by Colcock⁶ and by Cole.⁹ The indications for exploration

Table VI

INDICATIONS FOR EXPLORATION OF COMMON DUCT

1. Jaundice or history of jaundice.
2. Palpation of stone or suspicion of palpation of stone.
3. Multiple small stones in gallbladder with cystic duct larger.
4. Dilated common duct or thickened wall.
5. Pancreatitis about sphincter of Oddi.
6. Noncalculus gallbladder with severe suggestive symptoms (aspirate gallbladder first and feel for stones).
7. Muddy bile in common duct.
8. Post cholecystectomy:
 - (a) Severe symptoms.
 - (b) X-ray evidence of stones.
 - (c) Dilation of common duct with jaundice.

of the common duct vary considerably with the author but most include the indications in Table VI. Glenn includes an indication that if the patient is older than 60 and has a long history of biliary tract disease, then he explores the common duct.¹⁰ There were 13 postoperative complications in the series of patients or 17.5 per cent of the total number of 74 having the common duct exploration. There were three deaths with a mortality rate of 4.03 per cent. In this series jaundice was the most frequent indication for exploration of the common duct occurring 41 times for a percentage of 55.4 per cent. Thirteen patients were found to have stones or a percentage of 31.7 per cent. A dilated common duct was found in 30 patients; stones in the

Table V
COMPLICATIONS AND MORTALITY BY DIAGNOSIS
AT TIME OF OPERATION

	Operative Complications	Postoperative Complications	Mortality	No Complications	Total
Acute	1 (2.2%)	10 (22.7%)	2 (4.54%)	31	44
Acute Elective	1 (0.35%)	33 (11.7%)	7 (2.5%)	248	282
Chronic	1 (0.46%)	12 (5.6%)	0	201	214
Total	3	55	9 (1.7%)	482	540

Table VII
EXPLORATION OF COMMON DUCT

Total Number Patients	Postoperative Complications		Average Stay Postoperative	Mortality
74	13 (17.5%)		14.24 days	3 (4.05%)
Reasons	Number	Percentage	Number with Stones	Percentage With Stones
Jaundice	41	55.4%	13	31.7%
Dilated common duct	30	40.5%	10	33.3%
Stones in common duct	27	36.4%	27	100%
Multiple small stones in gallbladder	16	21.6%	8	50%
Pancreatic Disease	6	8.2%	2	33.3%
Injury to Common Duct	3	4.1%	0	0%
Stricture of common bile duct	9	12.2%	2	22.2%
Adenocarcinoma common bile duct	1		0	0%
Mucinous adenocarcinoma of gallbladder	1		0	0%

common duct were found in 27 patients; multiple small stones in the gallbladder in 16 patients; pancreatic disease in six patients; stricture of the common duct in nine patients and injury to the common duct in three patients. Adenocarcinoma of the common bile duct was found in one patient and mucinous adenocarcinoma of the gallbladder in another patient (Table VII). In the 27 patients in whom a stone was found in the common duct, pain was present in all 27, tenderness was present in 21, jaundice was present in 17, nausea and vomiting in 16, muscle spasm in eight, fever in four and recent weight loss in one. Nineteen patients in this group revealed chronic cholecystitis on pathological examination, six revealed acute cholecystitis, two revealed subacute cholecystitis and two showed pancreatitis. Forty-three patients had one indication for exploration of the common duct, while 24 patients had two indications and seven patients had three or more indications for choledochostomy.

After exploring the common duct, a T tube should always be placed in the duct and a drain placed along the gallbladder bed into the foramen of Winslow. During the anesthetic adequate fluid and electrolyte replacements should be maintained. After operation the patient should immediately be carried to

the recovery room and observed there until he has completely reacted.

Postoperatively, the patient should be observed very closely for shock; hemorrhage; subhepatic accumulation of fluid; peritonitis; either bacterial or chemical for bile; wound infection; jaundice; pneumonia; atelectasis; thrombophlebitis; pulmonary embolus or recurrent symptomatology.

Operative Procedures

In the patient being operated upon acutely, one should do a cholecystectomy only if all structures can be identified and ligated individually. Explore the common duct only if specifically indicated, and the gallbladder bed should always be drained. A cholecystostomy should be done if the structures cannot be identified and if there is abscess formation. If the gallbladder is ruptured and if there are associated diseases; or if the patient is surgically ill, elderly and a poor surgical risk, this procedure should also be done. If the preoperative diagnosis on abscess can be made, it can be drained under local anesthesia. In this series of 540 cases, prior biliary tract surgery has been performed in 22 cases; including 17 cases of cholecystostomy, one

Table VIII

COMPLICATIONS AND MORTALITY ACCORDING TO TYPE OF OPERATION PERFORMED

Operation	No.	Operative Complications	Postoperative Complications	Mortality
Cholecystectomy	311	3	26	6 1.9%
Cholecystectomy Exploration of Common Duct	74	0	13	3-4%
Cholecystectomy and Appendectomy	99	0	11	0
Cholecystectomy and Gastrectomy	4	0	1	0
Cholecystectomy and Liver Biopsy	10	0	0	0
Cholecystectomy and Other	42	0	4	0
TOTAL	540	3	55	9

case of cholecystectomy and four operations on the pancreas.¹¹

Operative procedures performed in this series were cholecystectomy in all cases; appendectomy in 128 cases; hernia repair in 16 cases; liver biopsy in 14 cases; gynecologic procedures in 13 cases; four cases of subtotal gastric resection; three cases of bowel resection; four cases of duodenotomy-sphincterotomy; three operations on the pancreas; four cases of pyloroplasty; four urological procedures; four proctological procedures and seven other minor procedures. In Table VIII are listed the complications and mortality according to the type of operation performed. It will be noted that the mortality rate for a cholecystectomy alone is 1.9 per cent, whereas that for a cholecystectomy, plus exploration of the common duct, is 4 per cent. These figures compare favorably with those reported in the literature.^{1, 4, 8} At operation of the chronic elective patient, a very thorough exploratory examination of all organs of the abdomen should be done by you and the assistant, and an evaluation of the biliary tree should be made. Identification of all structures becomes very important because most of the poor results requiring secondary operations are caused by failure to remove stones in the common duct or by leaving a long cystic duct remnant;¹² doing an incomplete cholecystectomy, or by not investigating a chronic recurrent pancreatitis due to spasm or stricture of the sphincter of Oddi, or pathology in or about the sphincter of Oddi.¹³

It has recently been advocated that routine aerobic and anaerobic cultures be obtained

of the gallbladder.¹⁴ It is reported that in acute cholecystitis three-fourths of the cases were positive for aerobic bacteria. In cases with chronic cholecystitis without stones, 50 per cent had positive cultures with the majority anaerobic; and with common duct stones over 90 per cent had positive cultures, one-third of which were anaerobic. In the postoperative care of the patient, after his return to the ward, intravenous fluids should be given as indicated until the patient is taking liquids by mouth; diet as tolerated, postnausea; demerol or one of the opiates for pain and antacid for heartburn; penicillin or streptomycin for a few doses, or longer if indicated; and large doses of vitamin C and B-Complex. Deep breathing exercises are recommended and position changes are accomplished often. Early ambulation is accomplished, especially in the elective case, and leg exercises are performed as often as possible. Catheterization and colon tube are ordered as needed. The wound should be dressed at least daily or more often if necessary. Drains should be shortened and removed anywhere from the second to the fourth day. Drains should be left in, however, if drainage is profuse. Enemas may be given anytime after the second to the third day. The patient is usually ambulatory on the fourth day and allowed to go home on the eighth postoperative day.

Postoperative Complications

There were 55 patients in this series who exhibited postoperative complications. There were three patients who exhibited operative

Table IX
COMPLICATIONS
POSTOPERATIVE—55

Wound infections	19
Pneumonia	12
Thrombophlebitis	7
Atelectasis	6
Pulmonary embolus	5
Dehiscence	4
Duodenal fistula	3
Ileus	3
Subphrenic abscess	2
Residual common duct obstruction	2
Other	8

OPERATIVE—3

Auricular fibrillation	1
Anoxemia (aspiration)	1
Infarcted liver	1

complications. In the age group under 50, there were 20 complications, while in the age group over 50 there were 35 complications. Table IX presents the types and relative frequency of complications found in this series. In Glenn's series the most frequent complication was the subhepatic accumulation of fluid and hemorrhage, biliary fistulas, bile peritonitis and jaundice with persistence of symptoms.¹⁵

The most frequent complication in this series was wound infections. Pneumonia was next most frequent, while thrombophlebitis, atelectasis, pulmonary embolus, wound dehiscence, duodenal fistula, ileus and subphrenic abscess followed in that order. Operative complications consisted of auricular fibrillation in one patient, aspiration with massive atelectasis and anoxemia in one patient, and an infarcted liver in one patient. Complications are arranged according to operative procedure in Table VIII, and according to time of operation in Table V.

Mortality

There were nine deaths in this series for an overall mortality rate of 1.7 per cent. This compares quite favorably with the mortality rate found in Glenn's series.¹ Seven of the

nine deaths were in patients over 60 years of age and six of the deaths occurred after a cholecystectomy alone, while three of the deaths occurred after cholecystectomy with exploration of the common duct. Two of the deaths occurred in patients having had an emergency acute operation, while seven patients died following a post-acute elective operation. No deaths were noted in the group categorized as having chronic elective surgery. Chronic cholecystitis was found after pathological examination in five patients. Pneumonia was the cause of death in three of these patients, pulmonary embolus in one patient and a coronary occlusion in another. The pathological diagnosis in three deaths was found to be acute cholecystitis, pneumonia was the cause of death in one, coronary occlusion in another and a cerebral vascular accident in another. One death was found to have subacute cholecystitis at surgery and died of massive atelectasis from aspiration on the operating table.

An analysis of the nine deaths in this series is shown in Table X. Seven of the deaths occurred in patients older than 60. Of the two younger deaths one, a 44 year old, white male, had a preoperative diagnosis of chronic cholecystitis with cholelithiasis and at operation was found to have an acute gallbladder with a stone impacting the cystic duct. During the procedure some bleeding was encountered from the cystic artery and the portal vein, but this was controlled adequately. The patient vomited, aspirated and developed massive atelectasis, and developed a cardiac arrest on the table. Cardiac massage was to no avail. The pathological report on this gallbladder was subacute cholecystitis and cholelithiasis.

In the other young patient, a 33 year old, white female, who was an obese asthmatic, was operated upon for obstructive jaundice and found at surgery to have a chronic cholecystitis with "strawberry gallbladder." A cholecystectomy and choledochostomy was performed with no operative difficulty. Four days postoperatively, the patient developed atelectasis, pneumonia, ileus and acute gastric retention. It was thought that death occurred

TABLE X

Death	Age	Sex	Color	Preoperative diagnosis	Surgical Findings	Operation Performed
1951	44	M	W	Chronic cholecystitis with Cholelithiasis	Acute gallbladder with stone in cystic duct	Cholecystectomy
1955	62	F	W	Chronic cholecystitis with cholelithiasis	Chronically scarred gallbladder with stones	Cholecystectomy
1955	33	F	W	Obstructive jaundice	Chronic cholecystitis; strawberry gallbladder	Cholecystectomy; Choledochostomy
1955	68	M	C	Chronic cholecystitis with cholelithiasis; obstructed cystic duct	Chronic cholecystitis with Cholelithiasis	Cholecystectomy (acute elective)-one month post-acute
1955	73	F	W	Obstructive jaundice	Stones in common duct and gallbladder; erosion through common duct; ascites	Cholecystectomy; choledochostomy; biopsy of liver
1957	64	M	W	Acute cholecystitis (15 days conservative treatment)	Moderately, acutely inflamed gallbladder	Cholecystectomy
1960	69	M	W	Acute cholecystitis, subsiding (3 months pta)	Foul smelling pus in gallbladder. Unable to remove all of gallbladder due to infection (upper two-thirds)	Cholecystostomy; subtotal cholecystectomy
1960	76	F	W	Acute perforation of gallbladder	Ruptured gallbladder	Cholecystectomy
1961	65	M	W	Acute and chronic cholecystitis (three weeks post-acute)	Marked omental and colon adhesions; stricture at ampulla	Cholecystectomy; choledochostomy

TABLE X (Continued)

Pathological Report	Days PO	Cause of Death	Contributory Causes
Subacute cholecystitis and cholelithiasis	0	Anoxia	Bleeding from cystic artery and portal vein. Massive atelectasis from aspiration of vomitus
Marked chronic cholecystitis with cholelithiasis	10	Bilateral pneumonia	Peritonitis; subdiaphragmatic abscess
Chronic cholecystitis with dilated lymphatics	4	Pneumonia atelectasis	Ileus; acute gastric retention; chronic respiratory infection; obesity
Chronic cholecystitis with cholelithiasis	9	Pulmonary embolus	Chronic tuberculosis; pneumoconiosis; ASHD; hypochloremic acidosis
?	2	Coronary occlusion	Long history of jaundice; cirrhosis
Acute and chronic cholecystitis with cholelithiasis	9	Cerebral vascular	Duodenal ulcer; pneumoconiosis; ASHD; renal shutdown
Mild chronic cholecystitis with cholelithiasis; R-A sinuses with trapped stones	7	Pneumonia	Postoperative wound infection; subphrenic abscess with liver extension; fibropurulent peritonitis
Acute gangrenous cholecystitis with cholelithiasis	24	Coronary (sudden death)	Infarction of liver; generalized ASHD; focal myocardial fibrosis; acute and chronic pyelonephritis; acute splenic tumor; diverticulitis and diverticulosis
Acute and chronic cholecystitis with adhesions	63	Pneumonia	Perforation to colon and duodenum during procedure; duodenal fistula

from pneumonia. The pathological report on this patient was chronic cholecystitis with dilated lymphatics.

There were two deaths included in this series which occurred after the patient was discharged from the hospital; one 63 days postoperatively and the other seven months postoperatively. They are included in this mortality group because it is felt that their surgery was the main contributing cause toward their death. One of these died of pneumonia at home one week after discharge some 63 days postoperatively, after having had a very stormy postoperative course, secondary to a duodenal fistula. This patient had had a prior cholecystostomy, was operated upon in the post-acute stage three weeks, was found to have a stricture at the ampulla requiring a duodenotomy and sphincterotomy. Pathological examination of the gallbladder was reported as acute and chronic cholecystitis with adhesions. The other patient, a 69 year old, white male, was operated upon three months post-acute, was found to have foul smelling pus in the gallbladder at surgery and only the upper two-thirds of the gallbladder could be removed. The patient did well until seven months postoperatively when he died after a febrile course with pneumonia, postoperative wound infection and subphrenic abscess with liver extension. If these two deaths were removed from the mortality list, it would reduce the overall mortality rate to 1.3 per cent and would reduce the mortality rate of the elective operations to one per cent.

An interesting finding in one patient was a 76 year old, white female who was operated upon with an acute perforation of the gallbladder. An uneventful cholecystectomy was performed. The patient did well for 24 days postoperatively, was sitting up eating and died a sudden death. Autopsy failed to reveal a coronary occlusion or a pulmonary embolus, but did reveal an infarction of a large portion of the liver, focal myocardial fibrosis, acute and chronic pyelonephritis and an acute splenic tumor. A review of the operative record of this patient revealed that the operator had encountered some brisk bleeding in

the gallbladder bed and a figure of eight suture was placed into the gallbladder bed for hemostasis, thus bringing to light one of the important hazards that one must be constantly aware of; that is, the inadvertent injury or ligation of the right hepatic artery or one of its major branches. However, it would be difficult to say that the infarction of the liver was the cause of death in this patient.

From an examination of the patients presented in Table X, it is obvious that mortality is the result of more than one factor. It would appear that age and associated chronic disease states play a very important role in the overall mortality experience.^{16, 17} Thus it would appear that mortality is as equally closely associated with the problem in the aged, as it is associated with the complications which are seen in delayed surgery. Conservative therapy done with a reduced mortality rate offers considerable restraint to the surgeon, and for the patient a much better chance for a more adequate medical evaluation.

Summary

This is an analysis of 540 hospital cases operated on in an 11 year period between 1951 and 1961. A cholecystectomy was performed in all cases with additional biliary tract surgery performed when indicated. Cases of acute cholecystitis were managed conservatively whenever possible and a post-acute elective cholecystectomy was performed one to six weeks later. In this series the mortality rate for those patients operated on in the acute phase was 4.54 per cent, whereas the mortality rate for post-acute elective and elective chronic cholecystectomies combined is 1.4 per cent. A post-acute elective cholecystectomy was performed by one of the surgeons in 242 cases with a mortality rate of only 0.4 of one per cent. Postoperative complications in the post-acute elective cases were significantly lower than those seen in cases operated upon in the acute phase of their disease. However, the more critical one is in searching for complications, the more

frequently one will find them. It is felt that all patients with cholelithiasis should have a cholecystectomy, whether they are symptom producing or not. Surgery should be performed before complications develop or before they fall into an older age group with a high mortality risk, or develop associated complicated diseases. The analysis of our series of patients indicates that the acute attack of cholecystitis should be allowed to subside, and the patient operated upon electively. Since the risk of rupture is only one per cent and that of generalized peritonitis only 0.2 of one per cent, we feel strongly that all biliary surgery should be scheduled in the operating room on a regular day, and should never be done as an emergency procedure unless the rapid development of signs and symptoms of rupture or generalized peritonitis necessitate immediate operative intervention. Cholecystostomy should be the procedure of choice when there is any question of visualization of anatomy, presence of abscess formation or when the patient is a poor surgical risk from any cause. It is always better to do staged procedures with patient salvage than to do a single procedure and lose the patient.

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EVALUATION OF OVERALL EFFECTIVENESS OF AN ANTIHISTAMINE DECONGESTANT IN GENERAL PRACTICE

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In a dusty industrial area such as Birmingham, with its air almost constantly saturated with smog, patients suffering with nasal congestion, post nasal drainage, and sinusitis with accompanying headache can readily be found. These symptoms, accompanied by scratchy pharynx and a dry, hacking cough, send thousands to their doctors daily.

Many antihistamine preparations were frequently prescribed over two years in the treatment of these upper respiratory problems. A high percentage of those treated later requested a return to a specific two-capsule per day preparation, consisting of phenylephrine hydrochloride 15 mg., phenylpropanolamine hydrochloride 25 mg., pyrilamine maleate 25 mg., and chlorpheniramine maleate 4 mg.** A thorough evaluation of

this preparation with special interest in its overall effectiveness in general practice was undertaken.

METHODS

This standard preparation was prescribed to 66 patients presenting with upper respiratory problems in the course of an active general practice. The patients, 33 men and 33 women, ranged in age from eight to 70 years. All of these patients complained of frequent sore throat, nasal congestion, and choking at night because of almost constant drainage of mucus into the back of the throat. During the day most patients had a dry non-productive cough and very frequent efforts had to be made to clear the throat. The degree of irritation ranged from moderate to severe. The duration of the condition before therapy ranged from one day to many years. The study showed 56 per cent (9 out of 16) of the severe cases had accompanying

*With the technical assistance of B. J. Moniger

**Napril Capsules—Marion Laboratories, Inc., Kansas City, Missouri.

Table I.
AVERAGE PER CENT RELIEF WITH AN ANTIHISTAMINE-
DECONGESTANT IN UPPER RESPIRATORY PROBLEMS

	Number of Cases	PER CENT RELIEF		
		Sinus Clearing	Nasal Clearing	Headache
A. DURATION OF CONDITION BEFORE THERAPY				
One week or less	15	93%	93%	98%
Over one week	51	84%	85%	93%
B. DEGREE OF IRRITATION				
Severe	16	79%	80%	90%
Moderate	50	88%	89%	96%
TOTAL	66	86%	87%	94%

headache, and 22 per cent (11 out of 50) of the moderate cases had accompanying headache. All patients were observed for untoward cardiovascular symptoms, nausea and drowsiness. The degree of sinus and/or nasal clearing and the degree of relief from sinus headache was estimated for each patient.

RESULTS

Table I shows the average results of the study in sinus clearing, nasal clearing, and sinus headache relief in relation to:

1. Total Cases
2. Duration of condition prior to therapy
3. Degree of irritation

Two patients complained of nausea, but one reported nausea was eliminated when medication was taken with food. Two patients reported slight drowsiness. Forty-seven of the patients have been able to maintain relief on taking one capsule nightly.

DISCUSSION

The average per cent relief of all the patients in the three areas . . .

Sinus clearing	86%
Nasal clearing	87%
Relief from headache	94%

. . . demonstrated the preparation to be highly effective in patients presenting with upper respiratory problems. There is a definite relationship between the per cent relief and the time of beginning therapy after the onset of the symptomatic conditions. The patients having the symptoms one week or less received a significantly higher per cent relief. In comparing the per cent relief of the moderate and severe cases, the moderate cases showed higher per cent relief.

The results show beneficial relief in severe and moderate cases regardless of the lapse of time between onset of symptoms and initiation of therapy. A minimum of side effects were observed. Considering all these factors the results indicate the preparation to be a satisfactory one-and-two capsule a day medication for the relief of upper respiratory problems met in general practice.

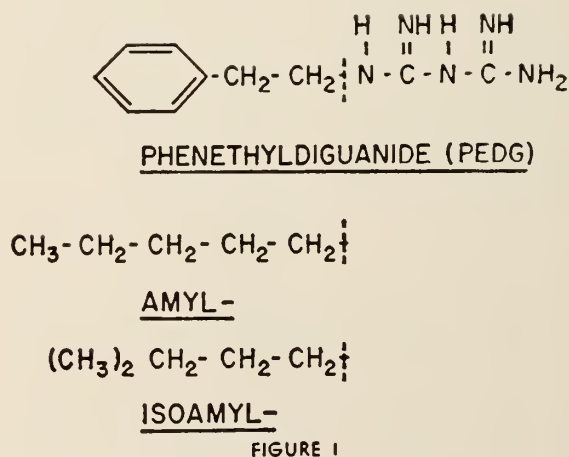
THE USE OF PHENFORMIN IN TREATMENT OF DIABETES MELLITUS

Robert E. Tranquada, M. D.*

The introduction of effective oral hypoglycemic agents has raised many questions about diabetes mellitus and its treatment for which complete answers are not yet available. This has had two noteworthy effects: it has stimulated basic research in the areas involved, resulting in the production of a large volume of new information, much of which has been of great value in the elucidation of basic mechanisms involved in diabetes; and it has raised the difficult problem for the practitioner as to the proper method of treatment of diabetes, including selection of the primary therapeutic agent. It is the purpose of this paper to review the experience of the past six years of clinical use of Phenformin (DBI®) in an attempt to place it objectively with respect to its usefulness, indications, contraindications, method of use, and abuse in treatment of diabetes.

Phenethylbiguanide (Phenformin, DBI®) is a substituted biguanide derivative, one of a family of drugs which have been shown to have hypoglycemic activity in animals

and man, and which are entirely different from the sulfonylureas (Fig. 1). Observation



of the hypoglycemic effects of guanidines was made as far back as 1918 by Watanabe,¹ and was stimulated by the work of Frank, Nothman, and Wasner² who introduced decamethylene-diguanide (Synthalin A) into clinical use in 1926, only to have it fall into disuse because of reported renal and hepatic toxicity in animals and man. With the revival of interest in oral treatment of diabetes stimulated by the observations of Janbon³ and

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Loubatieres⁴ in 1941 and 1942, a series of guanidine derivatives was systematically studied in the laboratories of the U. S. Vitamin and Pharmaceutical Corporation by Ungar, et al.,⁵ resulting in the introduction into clinical use of Phenformin (DBI®) in the spring of 1956.⁶ While several other biguanide compounds have also been found to have activity and some have received clinical trials and use here and in Europe,⁷⁻¹⁰ Phenformin has remained the most useful biguanide to date, and is the only one available for clinical use in the United States.

Mechanism of Action

A significant volume of literature has been produced as the result of the search for the mechanism of action of DBI®. In spite of the work which has been performed, considerable question remains as to the exact mode of action of this interesting drug. Several facts are worthy of mention, however, which may shed some light on this intriguing subject.

Observations in man indicate that DBI® has no apparent hypoglycemic activity in normal humans, at least in tolerable dosage, while it has well documented hypoglycemic activity in diabetic humans.¹¹⁻¹³ Very large doses (relative to man) will produce hypoglycemia, however, in normal rats, mice, guinea pigs, rabbits, cats, and monkeys, but not in normal dogs.^{5,8} Alloxan diabetic rats, rabbits, and monkeys respond to the drug with lowering of blood sugar levels,⁵ an observation which immediately differs from the effects of the sulfonylureas and indicates an entirely different mode of action. These observations have intrigued many investigators because of the unusual dichotomy of activity in normal and diabetic humans, and suggest that DBI® may have an activity which corrects a defect unique to the diabetic and not present in normal man.

Many experiments dealing with the effect of DBI® on the carbohydrate, fat, and protein metabolism of isolated surviving tissues have suggested that the chief mode of action of

DBI® may be the inhibition of aerobic glucose metabolism, in many tissues, with resultant increase in anaerobic glucose metabolism. The latter effect is felt to result in a significant increase in glucose utilization and lactic acid production by peripheral tissues and a decrease in the conversion of protein to carbohydrate (gluconeogenesis) and glycogen formation in the liver.¹³

There is no doubt that DBI® has these effects under the conditions in which it was studied. However, certain experimental observations in man and animals throw considerable doubt on this action as the basis for its effect in the diabetic human being. Wick and his associates have demonstrated that DBI® is rapidly altered in the rat, appearing in the gastric juice as a metabolic degradation product differing distinctly from DBI®, and that this and probably other metabolic products are excreted in the urine.¹⁴⁻¹⁵ In addition, assays of serum of diabetics adequately treated with the drug have not revealed levels of DBI® or its metabolites, which are compatible with levels necessary to produce the effects reported in in-vitro experiments.¹⁶ Additional observations of the acute effects of single doses of DBI® on the carbohydrate metabolism of the human liver fail to substantiate the above concept.¹⁷

Any explanation of the action of DBI® must take these observations into account, must explain its ability to produce hypoglycemia in the diabetic human only, and the increases in blood lactic acid observed during DBI® therapy, as well as its effectiveness in the absence of endogenous or exogenous insulin (although more effective in the presence of insulin), and the tendency of insulin dependent diabetics to develop ketoacidosis during periods of normoglycemia while being treated with the drug.¹⁸

It is possible that DBI® in very low concentration, or even more likely, a metabolite of DBI® is responsible for these observed effects. Either DBI® or a metabolite then appears to be active in lowering blood sugar probably from two points of action. In spite of the fact that DBI® produces hypoglycemia

in eviscerated guinea pigs,¹⁹ it seems likely that liver glycogen synthesis may be inhibited and that this effect would tend to reduce the output of glucose from the liver.²⁰ There seems to be little question that the major action of the drug is probably the stimulation of the uptake of glucose by peripheral tissues.^{17,19,21} These considerations are largely hypothetical, and unfortunately the exact mode of action of DBI® remains to be demonstrated.

Clinical Use of Phenformin

1. Indications for Use

The only documented advantage of any oral hypoglycemic agent over insulin is the fact that it may be taken by mouth. All of the oral agents are capable of controlling blood sugar levels in some diabetics, but none appear to completely replace or duplicate the effects of insulin.²² There is no available evidence, as yet, that the oral agents offer any increased beneficial effect upon the vascular complications of diabetes (peripheral vascular, neuropathic, cardiac, renal, etc.) compared with the long term effects of insulin. There is also no question that insulin itself is not a complete answer to the treatment of diabetes, in that the vascular complications continue to progress even with the most meticulous insulin control. The side effects of insulin, if they may be so-called, are significant in incidence and include allergy (local and systemic), hypoglycemia and lipodystrophy, and might be said to include the rare infection at sites of insulin injections. Phenformin, on the other hand, has not been unequivocally shown to produce toxic side effects when properly used (see below), but does carry a significant risk of unpleasant, reversible side effects.

The value of good control of diabetes with respect to decreased incidence of morbidity and mortality due to ketoacidosis and infection is not disputed. Acceptable, objective evidence of the value of close control of diabetes with respect to a diminished incidence or progression of vascular complica-

tions is difficult to come by, and such evidence as there is, is not fully accepted by all diabeticians. Nevertheless it is generally agreed that the most ideal state for the diabetic, with regard to glucose metabolism, is that which most nearly approaches the normal physiological state, i.e. normoglycemia and aglycosuria in the absence of hypoglycemia. Additionally, the long-term effects and limitations of dietary and insulin management of diabetes are well described and understood.

If the above principles of therapy are accepted, then it is clear from them that the use of Phenformin, or any agent other than insulin for control of diabetic hyperglycemia is indicated only when the resultant diabetic control is as good as or better than that which was previously achieved by diet alone or with insulin. The most important question, then, is which patients may be expected to show a response to the administration of DBI® such that their diabetes is as well or better controlled than it can be with insulin. The following classification of candidates for DBI treatment is offered.

A. *Stable diabetics (ketosis-resistant, adult diabetes)*. It is generally agreed that DBI® is most useful in that group of diabetics who may be expected to respond to the sulfonylureas.^{20, 23} This group consists of those diabetics with onset of diabetes after the age of 40, duration of diabetes of less than ten years, an insulin requirement of less than 40 units per day, and no history of ketoacidosis. Reports of the effectiveness of DBI® in this group vary, depending upon the enthusiasm and criteria of control of the investigator, but somewhere between 65 to 90 per cent of this group may be expected to respond to DBI® with good to excellent control of diabetes.^{23, 24}

B. *Unstable diabetics (ketosis-prone, brittle, juvenile diabetes)*. This group of diabetics does not respond to any currently available oral drug in the absence of insulin administration. Their disease is characterized by wide swings in blood sugar with recurrent hypoglycemia and ketoacidotic episodes. In addition they are usually relatively insulin sensitive and insulin dependent. Several

authors have remarked on the usefulness of a combination of DBI® with insulin in the stabilization of this type of diabetes.^{23, 25-27}

It is exceedingly difficult to evaluate "stabilization" of disease in this group because one is dealing with a variable picture of diabetes which undergoes spontaneous periods of stability and is influenced by a large number of uncontrollable factors, such as emotion, intercurrent illness, diet, etc. None of the above studies is well enough controlled that this use of DBI® may be said to be of unquestionable value. In fact, the only double-blind, well controlled study of the use of DBI® in brittle diabetics, of which we are aware, failed to demonstrate any benefit whatsoever from the combined use of DBI® and insulin in a small group of diabetic children.²⁸ Nevertheless, the problem case of brittle diabetes remains one of the areas in which DBI®, *used only in combination with insulin*, may be of value to some patients in stabilizing the disease.

C. Sulfonylurea failures. There is a growing body of evidence that DBI® may be of use in the group of patients who have experienced primary or secondary failure of control by sulfonylureas.^{25, 29-31} A small percentage (10-25%) may respond to DBI® alone. A much higher percentage will respond to a combination of DBI® with either Tolbutamide or Chlorpropamide (75-90%). This combination of drugs makes it possible to treat certain patients with oral agents, who are not well controlled on diet alone, or are unable to take insulin, either because of blindness, stroke, lack of cooperation, arthritis, allergy to insulin, or other cause. Once again, one must bear in mind that this therapy is not suitable for the patient who can be and is better controlled on diet alone or with insulin.

D. Insulin resistance. A significant percentage of patients who have temporary or permanent insulin resistance, requiring large doses of insulin and with resultant poor control, may, in our experience, come under excellent control with DBI® alone, or in combination with a sulfonylurea or a reduced dosage of insulin.²⁷

Table I

INITIATION OF THERAPY WITH DBI® TABLETS

Day	Insulin Dose	DBI® Tablets
1- 2	No Change	25 mg b.i.d.
3- 4	10-15% Reduction	25 mg b.i.d.
5- 6	No Change	25 mg t.i.d.
7- 8	10-20% Reduction	25 mg t.i.d.
9-10	No Change	50, 25, 25
11-12	10-20% Reduction	50, 25, 25

Table II

INITIATION OF THERAPY WITH DBI® TIMED-DISINTEGRATION CAPSULES

Day	Insulin Dose	DBI-TD® Capsules
1- 2	No Change	50 mg AM
3- 4	10-15% Reduction	50 mg AM
5- 6	No Change	100 mg AM
7- 8	10-20% Reduction	100 mg AM
9-10	No Change	100 mg AM
11-12	10-20% Reduction	150 mg AM, or 100 mg AM, 50 mg PM

2. Method of Administration of Phenformin

Only general rules can be laid down for the initiation and maintenance of therapy with DBI®. The dosage of insulin, DBI®, and sulfonylurea must be tailored individually to each case. Tables I and II present a suggested regimen for the administration of DBI® in tablet and timed-disintegration capsule form. The general rules for best success are as follows:

- Start with a low dose (25 mg b.i.d. for tablets, or one 50 mg TD capsule).
- Significant hypoglycemic effects will be seen in most cases only after two to four days, and may not be evident for as long as ten days.^{27, 32}
- Increase dosage very slowly (25 mg at a time with tablets, or 50 mg with TD capsules) at intervals of 4-5 days.
- Lower insulin dosage in 10-15 per cent increments as hypoglycemic effect of the added DBI® becomes apparent through careful following of urine and blood sugars during the period of adjustment to DBI®.

- e. The appearance of ketonuria in the absence of significant hyperglycemia calls for one or more of the following actions: addition of small amounts of insulin (beware of increased insulin sensitivity in this situation), increase of dietary carbohydrate, reduction of DBI® dosage.
- f. Mild side effects (see below) may subside with continued use of the drug, or may require reduced dosage. In all cases they disappear rapidly with discontinuation of the drug.

There is considerable clinical evidence that the effectiveness of the timed-disintegration capsule, and the diminished incidence of side effects for equivalent dosage, as compared with the tablet, recommend its use over the tablet.²⁴⁻²⁶ The direct experimental evidence of this fact is less clear.³³

3. Side Effects and Toxicity

Commonly observed side effects of therapy with Phenformin include chiefly anorexia, nausea, vomiting, diarrhea, metallic taste in the mouth, and less commonly marked lassitude, weakness, or drowsiness. During the early use of the drug, when therapy was initiated with large doses, and before there was adequate knowledge of upper limits of tolerable dosage, the incidence of side effects reached as high as 90 per cent.²⁷ However, with the administration initially of small amounts of DBI® and very gradual increases in dosage, and especially with introduction of the timed-disintegration capsules, the incidence of significant side effects can be controlled by lowering the dosage or discontinuing the drug.

The occurrence of ketoacidosis in the presence of normoglycemia or only moderate elevations of blood sugar was mentioned above. This has been observed by several investigators and is a sign of excessive drug dosage, insufficient insulin or carbohydrate intake, or all three.^{20, 34, 35} Symptomatic hypoglycemia has not been reported with use of DBI® alone, but has occurred with significant frequency (about that of insulin alone) when DBI® is given with insulin or a sulfonyleurea.^{27, 30}

No evidence of renal, hepatic, cardiac, cerebral, hematopoietic or other specific organ toxicity and very few allergic manifestations have been reported to follow the use of DBI®. Walker first reported the finding of increased serum lactic acid in young patients treated with DBI®, in whom he felt this was responsible for decreases in blood CO₂ and mild acidosis.³⁶ Five cases of irreversible lactic acidosis have recently been reported in patients receiving DBI®.^{37, 38} Although the relationship between DBI® administration and the lactic acidosis has not been unequivocally established, the blood levels of DBI® or its metabolites in three of these patients were found to be markedly elevated to levels which could have been responsible for the lactic acidosis.³⁷ All of these patients were ill with renal disease of acute and chronic nature, and several had cardiac disease as well. While irreversible lactic acidosis is not uniquely found in diabetics receiving DBI®, the evidence suggests strongly that DBI® therapy should be contraindicated in all diabetics who manifest significant renal impairment.

4. Contraindications

The contraindications to the use of DBI® are few but significant. Neither DBI® nor any other oral agent should be used as the primary agent in control of ketoacidosis. Ketoacidosis requires the use of insulin, and does not respond to oral agents. Juvenile diabetics and all unstable adult diabetics should not be treated with DBI® as the sole agent. DBI® can play the role of supplement to a basic supply of insulin, but ketoacidosis is a sure result of the use of DBI® alone in the unstable diabetic. DBI® should not be used in diabetics who have a significant degree of acute or chronic renal disease, and should be used only with great caution in patients who are moderately to severely ill with infections, cardiac disease, or other debilitating intercurrent disease. There is no available adequate evidence on the effect of DBI® on the human fetus, thus it is advised that this drug not be used during pregnancy until better evidence of its safety is presented.

Summary

Much progress has been made in knowledge of the proper use of Phenformin since its initial introduction into clinical usage in 1956, although its mechanism of action is still not clear. It is a useful drug in the treatment of adult-onset, stable diabetes, and may have a significant action in stabilizing brittle, or unstable diabetics when *used in conjunction with insulin*. In combination with either of the available sulfonylureas, it provides good control for a significant number of patients who failed to respond adequately to either DBI® or sulfonylurea alone. Side effects are largely associated with the gastrointestinal tract and are readily reversible with decrease in dosage or discontinuation of the drug. Using the adage "start low and go slow," side effects can be cut to a minimum. Timed-disintegration capsules appear to be more useful than the compressed tablets. The drug is contraindicated as primary means of control of ketoacidosis and should not be given to patients with significant renal impairment or other significant debilitating intercurrent disease.

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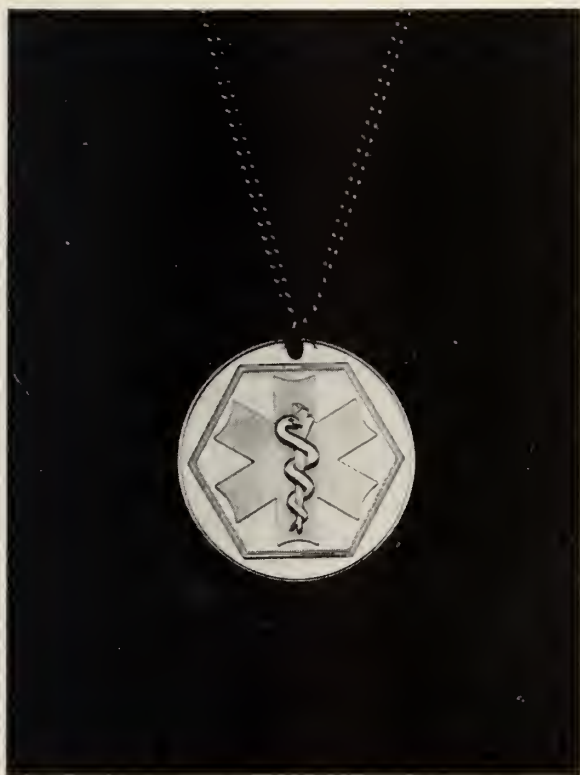
PHENFORMIN IN DIABETES MELLITUS

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Editorials



AMA EMERGENCY ID SYMBOL OFFERED

The new AMA's Emergency Medical Identification Symbol is now available as a coined medallion necklace. The entire reverse of the medallion is available for the engraving of important information for those who might require special aid in an emergency.

MEDIC-MEDAL is coined from solid nickel silver, and has a rhodium plated chain. An official AMA purse or billfold card accompanies each medal, to carry the patient's and physician's name and address, present medical problem, medicines, allergies and other important information.

A special prescription blank to assist the physician in prescribing proper identification is available in pad form gratis from the manufacturer, Wendell-Northwestern, Inc., 2424 East Franklin, Minneapolis, Minnesota 55406.

Physicians desiring an actual sample to show their patients will be mailed one pre-paid for the special price of \$1.50. MEDIC-MEDAL'S regular price is \$3.00.

The AMA urges that every person should carry a card, such as the AMA emergency medical identification card, and that people with special health problems should also wear a durable signal device indicating their special need for medical care.

PEACE CORPS OFFERS PHYSICIANS OPPORTUNITY TO GAIN UNIQUE CLINICAL EXPERIENCE OVERSEAS

Peace Corps Volunteer physicians serving in their special fields in challenging projects in Togo and Sierra Leone are testing their skills and ingenuity against diseases and problems seldom encountered in the United States.

Now, additional general practitioners, surgeons, pediatricians and gynecologists have the unique opportunity to serve for two years in these tropical African countries.

These medical projects will offer new chances to participate actively in the building of good health systems for young nations eager to lift themselves but handicapped by desperate medical and public health needs.

Both West African countries are seeking these physicians and other health personnel to carry on and expand the work begun by the first groups of medical Volunteers soon

completing their two-year Peace Corps service.

Public health and clinical nurses, pharmacists, lab and X-ray technicians, hospital mechanics and sanitation engineers are also needed for these medical projects.

Training will begin about March 1 for members of the new Togo medical team. They will leave for their African assignment after 12 weeks of preparation at an American university. The Sierra Leone group will enter training in June.

In both Togo and Sierra Leone, the medical teams will instruct host country personnel, help carry out government plans to make their hospitals base medical centers, give advice and guidance for expanding and improving rural health programs, organize school canteens and milk programs, and make nutritional, plasma protein, and demographic studies.

The general practitioners in Togo will work at the 225-bed Sokode Hospital, but will also be called upon to perform work in the Polyclinic, as well as in fifteen satellite rural dispensaries. It is hoped that some of the new Volunteers will have special interest in diseases of the eye, and that others may help to expand programs of public health and preventive medicine.

For the surgeons, operative work will involve inguinal hernias, Caesarean sections, major and minor abdominal operations, thoracotomies, excision of onchocercal nodules, hydrocelectomies, skin grafts, circumcisions, pyloromyotomies, bone and periosteal biopsy, and a wide variety of other surgical procedures. The surgeons also may be expected to perform gynecological work and visit satellite dispensaries in case of emergencies.

The pediatricians will be in charge of pediatric services at the hospitals and will occasionally be called upon to serve at leprosy out-patient clinics, as well as to respond to emergencies at the satellite clinics.

The new Peace Corps medical teams will build on the foundations already established by Volunteers who have increased the num-

ber of patients who receive treatment, improved the diagnostic and therapeutic techniques used, instituted school health programs and public health instruction, begun malaria control measures and immunization programs, sprayed hospital wards and colleges and constructed model public latrines.

Their curative record includes over one hundred operations performed by Peace Corps surgeons. They have also serviced prenatal and well-baby clinics and local dispensaries.

Although the departing Peace Corps teams leave a remarkable record of accomplishment, they have endured some heartbreaking discouragement in the process.

"Death is ever present in the lives of the people of Sokode. Disease is so common and normal that few mothers ever date the onset of any illness, no matter how obviously chronic, further back than a few days or weeks."

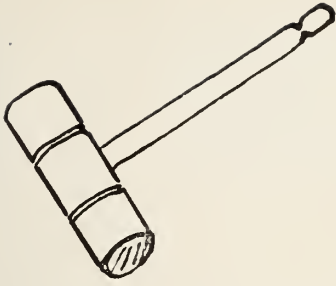
This was the ominous report from Dr. Nick Cunningham, the first pediatrician to offer his services as a Peace Corps Volunteer, when he arrived at his post in Africa.

It was his interest in studying problems of tropical diseases, especially those related to malnutrition, that led the 35-year-old New York physician to join the Peace Corps.

Although Volunteers receive only \$75 a month in addition to living and travel expenses, there are many other compensations, such as the experience which Dr. Cunningham has gained in Togo, where he is observing and treating illnesses rarely found in North America—experience which he hopes will further his future career in internal medicine.

Classroom preparation will cover the history, culture, economy, geography and politics of West Africa; Communism and the methods by which the free world is meeting its threat; international affairs, and refresher courses in American history and institutions.

Questionnaires (applications) should be submitted as soon as possible. They may be obtained by writing: Physicians, Division of Recruiting, Peace Corps, Washington, D. C. 20525.



President's Page



MESSAGE FOR MARCH

During this year it has been my privilege to get better acquainted with how extensive the MASA is and how all inclusive are its activities.

There are two main divisions of service being rendered by this organization. One deals with the members themselves, for instance, the Board of Censors and Medical Examiners, the other the Board of Health, which renders a service to all the people of the state.

Each of these divisions has its own executive director, employed by the association for a given tenure of office. Each has its own headquarters with separate facilities and personnel. Both of them have a common board from which they receive directives, and to which they are accountable. This common board is a tri-functional one. It is composed of ten elective members whose duties are to act for the MASA during the interim between annual meetings.

Many of their tasks are delegated to various committees who make detailed studies of the

problems and submit their conclusions to the board for whatever action it thinks best for the Association.

In order to meet current demands of the changing times, it became necessary to secure facilities to house the people who are to execute the day to day business of the association. There is at 19 South Jackson Street in Montgomery, a well constructed and nicely furnished office building known as the Home Office of the MASA. This is a debt free project and is a place of pride and joy for every member of the State Medical Association. Don't fail to visit it when in Montgomery.

The staff in this office consists of the executive secretary, Mr. W. V. Wallace; assistant executive secretary, Mr. M. R. Crawford; administrative assistant, Mr. Emmett Wyatt; managing editor of the JOURNAL, Mrs. Nell Williford; three secretaries, Mrs. Tessie Sellers, Mrs. Betty Bowles, and Mrs. D. G. Gill; and last but not least,

membership clerk and machine operator, Mr. John Frazier. These people attend to the affairs of the Association.

One can hardly imagine how much work is done by these people. They are all top flight, qualified, consecrated and dedicated people who spare no time or effort in doing a good job.

The second division of services performed by MASA is staffed by the State Health Officer, Ira L. Myers, M. D. as executive director of the Alabama Department of Public Health. He is nominated to this office every five years by the board and of course, is approved by you at the annual meeting on that occasion.

It is required that he have an M. D. degree plus other training necessary to qualify him for the multiplicity of duties attached to his office.

Not long ago Dr. Myers took time out of his busy schedule to show me through the operation located here in the capital. One can hardly comprehend the scope and extent of services which are rendered from here to all citizens in Alabama.

Although I had served on the Board of Health for eleven years I did not know just what was being done nor who was doing it. There is someone adequately prepared and available to answer most any question arising that might concern the health care of all people in Alabama. The magnitude of this central office facilities and people is beyond my ability to describe. It was really gratifying to meet and listen to all these people tell about their endeavors and accomplishments. They encompass a vast field of specific and generalized training including M. D.-Ph. D.-D. D. S.- etc. All these people are really serving the MASA well and we should show them all the appreciation possible.

All this is merely the central office from which orders go out to 67 county units where a greater number of people work in beautiful health centers. One's official and professional pride is raised to its zenith when he makes a personal inventory of all the ways through which the MASA is rendering service to all

people in our state. Dr. Myers and his cabinet have prepared and circulated to the doctors a detailed directory of services which should be read by every doctor in Alabama.

Of course all of us know we have such activities as these, but too few of us are personally and understandingly acquainted with the people who are rendering them, even in our own localities.

It would create more favorable relationship for all if each of us would show a little more concern for this part of our obligations as members of the committee of public health.

There are five doctors on the Board of Health whose duty it is to work closely with the county health officer in executing health measures.

Perhaps you haven't appreciated how closely related to each other these two divisions of service are—a fact that makes the functions of MASA a unique something. All doctors are part of both divisions. The State Health Officer is by statute the secretary-treasurer of the Board of Medical Examiners. At one time this may have been the wisest thing to have, but with increasing duties in both divisions it might be better to relieve the health officer of this part of his duties, thus allowing him to be absolutely free to execute his plans as State Health Officer. The Board of Medical Examiners can very well afford to arrange for a secretary-treasurer otherwise. This change would add efficiency to each division and delete embarrassing situations that could reflect adversely on the State Health Officer.

Again may it be emphasized that MASA has in its various divisions of service, people who are of the utmost value in maintaining the health standards of the state at its highest level. The least we can do is support it with all the strength and ingenuity we have. By all means let's tell our patients what part we are playing in this total program of health care for them throughout all Alabama.



J. G. Daves, M. D.



around the state

NOW HEAR THIS!

ALABAMA CHAPTER AMERICAN ACADEMY OF PEDIATRICS

NOTICE TO ALL MEMBERS

- I. Date of Annual meeting of Alabama Chapter: Wed., Mar. 25th, 4 p. m. following Post-Grad. program at Med. School. SOCIAL HOUR AND BANQUET TO FOLLOW. P. G. course will end next day, Thursday, March 26th by 4 p. m.
- II. Dewey White's term on Executive Committee expires. Nominating committee will submit nominations before February 25th. (4 weeks prior to annual meeting) Nominations may be made from the floor.
- III. List of new Committees for 1964 follows:
Nominating: Wm. A. Daniel, Jr., Chairman; Carey W. Phillips, Jr., Edward A. Dudley, Jr.
Program: Sarah F. Davis, Chairman; Daniel F. Sullivan, Wm. A. Daniel, Jr.
Public Health and Legislation: Carey W. Phillips, Jr. 2 yrs. term exp. 1966. James F. Alison, Jr., 1 yr. term exp. 1965; M. Vaun Adams, Chairman 3 yrs. term exp. 1967.
Public Service: D. Joseph Judge, Chairman, term exp. 1967; James G. Middleton, term exp. 1965; Edwin Lee Webb, term exp. 1966.
Mentally and Physically Handicapped: John W. Simpson, Chairman; Henry S. Durham, Jr.; Edward A. Dudley, Jr.
Accident Prevention and Poison Control: Jerome A. Weaver, Chairman; John F. Shriner; Harry C. Shirkey, Consultant; T. C. Nolan, Carey W. Phillips, Jr.
Fetus and Newborn: Joseph W. Ramsey, Chairman; James F. Alison, Daniel W. Burke.

Cardiac Disease: L. M. Barger, Chairman; Wallace A. Clyde, Robert O. Harris.

Surgery: Marshall Pitts.

School Health and Juvenile Delinquency: Daniel F. Sullivan, Chairman; Hughes Kennedy III, Wm. A. Daniel, Jr.

Executive Committee: Edward A. Harris, Daniel F. Sullivan, Edward A. Dudley, Jr. term exp 1965;

Dewey A. White, Jr. term exp. 1964; Jerome A. Weaver.

Representative from Alabama Chapter AAP to Committee for Child Day Care (State Dept. of Pensions and Security): Wm. A. Daniel, Jr.

Representative to State Advisory Committee on Children and Youth (Bureau of Maternal and Child Health): Hughes Kennedy III.

The State Chairman would welcome communications from any member wishing to serve on any committee and would also welcome any suggestions as to Academy functions.

Edward A. Harris, M. D., State Chairman

J. A. Weaver, M. D., Secretary-Treasurer

AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY

The next scheduled examination (Part II), oral and clinical, will be conducted for all candidates at the Edgewater Beach Hotel, Chicago, Illinois, by the entire Board, April 27-May 2, 1964. Formal notice of the time of examination will be sent to each candidate in advance of the examination dates.

Current Bulletins of the American Board of Obstetrics and Gynecology outlining the requirements for application, may be obtained by writing to the Secretary of the Board. All prospective candidates are urged to review the current requirements before applying for admission to examination.

Diplomates are requested to keep the Board office informed of a change in address.

Office of the Secretary:

Robert L. Faulkner, M. D.

2105 Adelbert Road

Cleveland 6, Ohio



See next two pages for Candid Camera at the annual meeting, Alabama Chapter, American College of Surgeons, Point Clear, Alabama.







MEDICAL CENTER NEWS

TOMMY E. HILL NIGHT ADMINISTRATOR

Tommy E. Hill has assumed the responsibilities of Night Administrator at University Hospital according to Matthew F. McNulty, Jr., General Director, University of Alabama Hospitals and Clinics. Mr. Hill succeeds George L. Reynolds who resigned to accept an administrative position at the Jackson County Hospital in Scottsboro, Alabama.

Mr. Hill is a native of the Birmingham area and attended Jones Valley High School. He also attended the University of Alabama where he received his Bachelor of Science degree in physical education and science in 1961. He was awarded a Master of Arts degree in school administration and supervision from the University in 1962.

Following the completion of his graduate studies, Hill was an underwriter for a local insurance firm. His former experience includes one year with the Bradford County (Florida) Board of Public Instruction as principal of the Brooker Junior High School in Starke, Florida.

While at the University, Mr. Hill was affiliated with Kappa Delta Pi, national education honor society, and his professional organizations include Phi Delta Kappa and the National Education Association.

HUMANITARIAN AWARD

The University Hospital Auxiliary has been lauded with the Outstanding Humanitarian Award of the Inter-Club Council of Birmingham at the Council's Sixth Annual Awards Banquet which was held recently.

Calling attention to the Auxiliary's diverse humanitarian programs, the Council awarded the trophy for "the (Auxiliary's) aid, both spiritual and material to the peoples in the city, the county, and the State."

The Auxiliary, whose volunteers total more than a thousand, was begun in January, 1950, for the purpose of interpreting the Hospital Services and needs, providing extra services within the Hospital, sustaining the work of the health team as well as raising funds for the Hospital's benefit.

ALUMNI ASSOCIATION

The Medical College of Alabama Alumni Association will hold its annual general meeting in connection with the Medical Association of the State of Alabama in Montgomery April 23 through 25, 1964.

The Alumni Association, which represents some 1,800 graduates, was formed at the general meeting of the M.A.S.A. in Mobile last Spring when members voted unanimously to unite the alumni of Alabama's medical Colleges into one organization with the same objective of furthering medical education within the State.

The merger consolidated alumni from the two-year schools in Mobile and Tuscaloosa with the four-year program in Birmingham.

Presently serving as president of the organization is Edwin G. Waldrop, M. D. President-elect of the Alumni group is L. Clark Gravlee, Jr., M.D., with O. Thomas Bolding, M.D., secretary and Lonnie V. Funderburg, M.D., treasurer.



ORGANIZATION SECTION

PROGRAM

*Of The 103rd Annual Session
Of The
MEDICAL ASSOCIATION OF THE STATE OF ALABAMA
Montgomery
Jefferson Davis Hotel
April 23, 24, 25, 1964*

GENERAL INFORMATION

All sessions of the Association and exhibits will be at the Jefferson Davis Hotel, convention headquarters.

REGISTRATION

The registration desk will be on the mezzanine floor of the hotel. Be sure to register.

THE FIFTY YEAR CLUB

According to custom, physician members who graduated fifty years ago will be honored by the Association at this meeting. Their names appear in the program.

HOST TO THE ASSOCIATION

The Medical Society of Montgomery County

OFFICERS

Paul D. Everest, *President*
H. J. Till, *Vice-President*
William L. Smith, *Secretary-Treasurer*

BOARD OF CENSORS

Leon Rosen, *Chairman*
William B. Virgin, John Allen Jones
Harry Glazer, Thomas H. Williams, Jr.

COMMITTEES

GENERAL CO-CHAIRMEN

Joe W. Perry Thomas H. Williams, Jr.

Hotel:

Robert T. Ashurst, *Chairman*
A. S. Zdanis, *Co-Chairman*
Warren Shuman Bruce F. Holding, Jr.

Hall—Audiovisual:

W. A. Daniel, Jr., *Chairman*
James H. French, *Co-Chairman*
Mervel V. Parker John M. Pickering

Scientific Exhibits:

T. Brannon Hubbard, Jr., *Chairman*
George B. Penton, *Co-Chairman*
Hugh MacGuire Paul Lochte

Commercial Exhibits:

William B. Virgin, *Chairman*
S. J. Selikoff, *Co-Chairman*
William M. Brock B. F. Dorrough
Floris M. Herbert Grover C. Murchison

ORGANIZATION SECTION

Entertainment:

John Allen Jones, *Chairman*
 Harry J. Till, *Co-Chairman*
 Edwin B. Kent Hugh Praytor
 Ross McBryde E. Fred Campbell

Finance:

Nace R. Cohen, *Chairman*
 Walker B. Sorrell, *Co-Chairman*
 George R. Cocks William F. Reynolds

Hospital Visitation:

William R. Britton, *Chairman*
 Paul M. Shashy, *Co-Chairman*
 William B. Crum Jack Wool

Golf:

John S. Yow, *Chairman*
 Truett Jackson, *Co-Chairman*
 Willard Bennett Paul S. Mertins
 David E. Dunn Karl B. Benkwith

Publicity:

William C. Waller, *Chairman*
 Kathleen Wickman, *Co-Chairman*
 Philip M. Lightfoot, Jr. John M. Cameron

Transportation:

Richard M. Garrett, *Chairman*
 John W. Webb, *Co-Chairman*
 Irl R. Long James M. Parks

Hospitality:

A. E. Thomas, *Chairman*
 David B. Monsky, *Co-Chairman*
 Haywood S. Bartlett Franklin Jackson
 Thomas S. Boozer J. Cobb Laslie
 J. Mac Barnes John A. Martin
 John W. Davis, Jr. Frank Riggs
 Harry Glazer Leon Rosen
 Dan S. Hagood C. S. Stickley
 T. Brannon Hubbard, Sr. Francis M. Thigpen

OFFICERS OF THE ASSOCIATION

President

J. G. Daves Cullman

President-Elect

E. B. Glenn Birmingham

Vice-Presidents

H. G. Hodo, Jr. Fayette
 E. L. Strandell Brewton
 J. H. Meigs Anniston

Secretary-Treasurer

William L. Smith Montgomery

Executive Secretary

William V. Wallace Montgomery

Assistant Executive Secretary

Marshall R. Crawford Montgomery

The State Board of Censors

J. Paul Jones, *Chairman* Camden
 W. S. Littlejohn Birmingham
 G. O. Segrest Mobile
 Hugh E. Gray Anniston
 John M. Chenault Decatur
 Paul W. Burleson Birmingham
 Robert Parker Montgomery
 J. P. Collier Tuscaloosa
 J. O. Finney Gadsden
 L. L. Hill Montgomery

State Health Officer

Ira L. Myers Montgomery

Delegates and Alternates to the American Medical Association

Delegate—M. Vaun Adams Mobile
 Alternate—J. Michaelson Foley
 (Term: January 1, 1964—December 31, 1965)
 Delegate—John M. Chenault Decatur
 Alternate—William L. Smith Montgomery
 (Term: January 1, 1964—December 31, 1965)
 Delegate—E. Bryce Robinson, Jr. Fairfield
 Alternate—W. E. White Anniston
 (Term: January 1, 1963—December 31, 1964)

M. A. S. A.
 ANNUAL SESSION
 APRIL 23-24-25, 1964
 JEFFERSON DAVIS HOTEL
 MONTGOMERY, ALABAMA

PROGRAM

First Day, Thursday, April 23, 1964

Civic Room

Morning Session

9:00 A. M.

Call to order by President—

J. G. Daves, M. D., Cullman

One-half minute standing silence commemorating deceased since last annual meeting.

Invocation—Rev. Joel D. McDavid

Addresses of welcome—

Mayor Earl B. James, Montgomery

Paul D. Everest, M. D., President, Medical Society of Montgomery County

Introduction and comments by President—

Young and new doctors in group

Past Presidents in group

Fifty Year Class in group with presentations of their certificates

Awards—Essay Contest, William Crawford Gorgas, Douglas L. Cannon Medical Reporter, AMPAC.

Vice-Presidents Report—

Northeastern Division—*J. H. Meigs, M. D.*

Northwestern Division—*H. G. Hodo, M. D.*

Southwestern Division—*E. L. Strandell, M. D.*

Woman's Auxiliary—*Mrs. W. R. Sutton, President, The Woman's Auxiliary to the Medical Association of the State of Alabama, Blountsville, Alabama.*

Secretary-Treasurer, Medical Association of the State of Alabama—*William L. Smith, M. D.*

Executive Secretary—*William V. Wallace*

Committees—Reports in person by Chairmen

A. Standing Committees

1. *Public Relations—C. A. Grote, Jr., M. D.*
2. *Medical Education and Hospitals—W. L. Hawley, M. D.*
3. *Insurance—C. A. Lightcap, M. D.*
4. *Finance—H. G. Hodo, Jr., M. D.*
5. *Constitution and By-Laws—William C. Waller, M. D.*
6. *Aging and the Indigent—J. G. Galbraith, M. D.*
7. *Legislation—E. L. McCafferty, Jr., M. D.*
8. *Rural Health—Paul Nickerson, M. D.*
9. *Maternal and Child Health—J. F. Vanhoof, M. D.*

10. *Allied Medical Services—W. J. Atkinson, Jr., M. D.*

11. *Grievance—Edgar G. Givhan, M. D.*

12. *Board of Censors—J. Paul Jones, M. D.*

13. *Orientation—E. B. Glenn, M. D.*

B. Special Committees

1. *AMA-ERF—R. C. Speir, Jr., M. D.*

Presentation of AMA-ERF check

2. *Blue Cross-Blue Shield—A. C. Gipson, M. D.*

3. *Relative Value Index—W. B. Crum, M. D.*

4. *Annual Meeting—George W. Newburn, Jr., M. D.*

5. *Alabama Hospital—Medical Council—E. B. Robinson, Jr., M. D.*

6. *Advisory Committee to Medical College—Wyatt C. Simpson, M. D.*

Your Board of Censors—

John M. Chenault, M. D.

President's Message—

J. G. Daves, M. D.

Civic Room

Afternoon Session

2:00 P. M.

Participation in AMA

F. J. L. BLASINGAME, M. D.

Executive Vice-President

American Medical Association

Chicago, Illinois

Public Health in Alabama—Yesterday—Today—Tomorrow

SIDNEY WILLIAMS, M. D.

Livingston, Alabama

How to Meet the Problems of Growing Older

R. O. RUTLAND, JR., M. D.

Fayette, Alabama

Specialists and General Practice

JULIUS MICHAELSON, M. D.

Foley, Alabama

Dentistry and Medicine

NEWTON ALLEN, D. D. S.

Selma, Alabama

Pharmacy and Medicine

W. F. DAVOREN

Huntsville, Alabama

Leukemia

JOHN WADE, M. D.

Montgomery, Alabama

ORGANIZATION SECTION

Second Day, Friday, April 24, 1964

Davis Room

Morning Session

9:00 A. M.

Call to order by President—
J. G. Daves, M. D.

Invocation—
Rev. Charles H. Douglass

Medicine and the Ministry—
John D. Perkins, Birmingham, Pastor, McCoy Memorial Methodist Church

Medicine and Public Education—
Kermit Johnson, President, Alabama Educational Association, Birmingham

The Hon. George Wallace, Governor of Alabama

Recognition of Fraternal Organizations

The JEROME COCHRAN LECTURE—
Luther L. Terry, M. D., Surgeon General, U. S. P. H. S.

Meeting of Counsellors and Delegates

Saturday, April 25, 1964

Davis Room

Business Meeting

9:00 A. M.

Invocation: Rev. Henry Meyers, Cullman

Business meeting of the Association sitting as the Board of Health of the State of Alabama.

- (1) Report of the Board of Censors;
- (2) Revision of the Rolls:
 - (a) County Societies,
 - (b) Counsellors,
 - (c) Correspondents;
- (3) Election and Installation of Officers
- (4) Presentation of Past President's Plaque

ADJOURNMENT

THE FIFTY YEAR CLUB

Class of 1964

(To whom Certificates of Distinction will be awarded on Thursday morning, April 23.)

Ralph H. Allen	Butler
Jesse L. Byrd	Dothan
Rufus A. Culpepper	Cullman
James H. Dodson	Mobile
Maurice M. Duncan	Huntsville
Benjamin F. Frazer	Lafayette
Claud G. Godard	Fairhope
Anderson C. Green	Sumiton
Herbert A. Harris	Birmingham
J. Howard Hays	Birmingham
Wilbur L. Heard	Mt. Vernon
Lemuel J. Johns	Birmingham
Leland S. Light	Daphne
Robert G. Lovelady	Birmingham
Edward D. McAdory	Cullman
Jerome Meyer	Birmingham
George Guy Oswalt	Mobile
Shaler S. Roberts	Florence
Wyatt S. Roberts	Birmingham
John D. Scrivner	Berry
Ewell M. Stokes	Montgomery
Lee F. Turlington	Birmingham
Zadoc L. Weatherford	Red Bay

Friday, April 24, 1964

Davis Room

Afternoon Session

2:30 P. M.

Present Status of Renal Transplant—J. Walden Retan, M. D., Assistant Professor of Medicine, Renal Division, Department of Medicine, Medical College of Alabama

Fluid and Electrolyte Imbalance in Intestinal Obstruction—M. Bruce Sullivan, Jr., M. D., Associate Professor of Surgery, Assistant Dean for Clinical Affairs, Medical College of Alabama

SYMPOSIUM ON MENTAL SUBNORMALITY

Some Preventable Causes of Mental Retardation and Their Management—John W. Benton, Jr., M. D., Assistant Professor of Pediatrics and Neurology, Medical College of Alabama

Psychological Evaluation in Mental Retardation—Mary I. Duwall, Ph. D., Assistant Professor of Clinical Psychology, Department of Psychiatry, Medical College of Alabama

Role of Chromosome Aberrations in Patients with Mental Retardations—Wayne Finley, M. D., Assistant Professor of Pediatrics, Medical College of Alabama

Psychiatric Aspects of Mental Retardations—James Sussex, M. D., Professor and Chairman, Department of Psychiatry, Medical College of Alabama

ORGANIZATION SECTION

VACANCIES IN THE COLLEGE OF COUNSELLORS

1st Congressional District—4. M. Vaun Adams has completed his first term of seven years. W. W. Eddins has completed his first term of seven years. J. H. Little has completed his first term of seven years. Under reapportionment of Counsellors by the State Board of Censors, the district is allotted a Counsellorship to which it is entitled.

2nd Congressional District—2. J. L. Branch is to be elevated to Life Counsellor. L. L. Hill, Jr. has completed his first term of seven years.

3rd Congressional District—1. B. F. Thomas, Sr. has completed his first term of seven years.

4th Congressional District—2. R. P. Stock has completed his first term of seven years. E. G. Moore is deceased.

5th Congressional District—2. J. M. Crawford has completed his second term of seven years. A. C. Gipson is to be elevated to Life Counsellor.

6th Congressional District—2. L. H. Hubbard has completed his first term of seven years. A. F. Wilkerson has completed his second term of seven years.

7th Congressional District—1. G. T. Rowe has completed his first term of seven years.

8th Congressional District—2. N. E. Cowart has completed his first term of seven years. C. G. Farish has resigned.

9th Congressional District—3. H. W. Allgood, Sr. and J. Ralph Morgan are to be elevated to Life Counsellor. J. G. Galbraith has completed his first term of seven years.

Social Events

Wednesday, April 22

Cocktail Party for Exhibitors—Capitol Room. 5-6:30 P. M.

Thursday, April 23

Past Presidents and Fifty Year Club will be entertained at breakfast, 7:00 A. M., Plantation Room.

Orientation Luncheon—Senate Room, Jefferson Davis Hotel, 12:00 Noon.

The Scroll and Key Club of Montgomery, Alabama, will sponsor a cocktail party at 6:00 P. M. and Dinner at 7:30 P. M., at the Montgomery Country Club. Entertainment by Shearen Elebash, 9:00 P. M. Bus service will be furnished from the Jefferson Davis Hotel to the Montgomery Country Club.

Friday, April 24

Luncheon honoring Dr. Luther L. Terry, 12:30 P. M., Civic Room, Jefferson Davis Hotel.

The Scroll and Key Club of Montgomery, Alabama, will sponsor the President's Ball in the Davis Room of the Jefferson Davis Hotel. Cocktails will be served at 6:00 P. M.; Dinner at 7:30

P. M. Jerry Lane and his famous Orchestra from Jackson, Mississippi, will furnish music for the Ball.

Other Events

Wednesday, April 22, 1964

Physicians Golf Tournament

Physicians are invited to compete for golf trophies at the Bonnie Crest Country Club. Tournament rounds will begin at 9:00 A.M.

Alabama Chapter, American Academy of General Practice

The Board of Directors of the Alabama Chapter, American Academy of General Practice will meet at 6:30 P. M. in the Civic Room of the Whitley Hotel.

Alabama Academy of Ophthalmology and Otolaryngology

The Alabama Academy of Ophthalmology and Otolaryngology will meet at the Mid-Town Holiday Inn, 5:00 P. M. There will be a program, a social hour, and dinner.

Alabama Orthopaedic Society

The Alabama Orthopaedic Society will have a luncheon and scientific meeting at 12 noon in the Gold Room of the Diplomat Inn. Dinner will be served at the Blue Moon Inn, preceded by a social hour.

Thursday, April 23, 1964

Alumni Association

The Medical College of Alabama Alumni Association will have a cocktail hour in the State Room, Whitley Hotel, 6:30 P.M.

Friday, April 24, 1964

International College of Surgeons

The Alabama Chapter, International College of Surgeons will have a breakfast meeting in Room 106, Whitley Hotel, 7:30 A.M.

Alumni Association

The Medical College of Alabama Alumni Association will have a luncheon in Room 106, Whitley Hotel, 12:30 P.M.

Tulane University Medical Alumni

The medical alumni of Tulane University will have a luncheon in the Capitol Room, Jefferson Davis Hotel, 12:30 P.M.

Alabama Radiological Society

The Alabama Radiological Society will have a luncheon meeting, time and place will be found in the regular printed program.

Saturday, April 25, 1964

Open House

The Medical Association of the State of Alabama will hold open house at the Association Building, 19 South Jackson Street, from 1:00 P. M. to 3:00 P. M.

PROGRAM

Of The WOMAN'S AUXILIARY

To The

MEDICAL ASSOCIATION OF THE STATE OF ALABAMA

WHITLEY HOTEL

APRIL 23-24, 1964

OFFICERS

President

Mrs. W. R. Sutton Blountsville

President-Elect

Mrs. L. H. Clemmons Cullman

Vice-Presidents

Northwest—Mrs. Walter Brower Birmingham

Southwest—Mrs. Jack Yeager Mobile

Northeast—Mrs. Joe Denson Gadsden

Southeast—Mrs. Walker Sorrell Montgomery

Recording Secretary

Mrs. J. M. Humphries Birmingham

Corresponding Secretary

Mrs. Mercer Rowe Gadsden

Treasurer

Mrs. Ira Patton Oneonta

Finance Officer

Mrs. H. Price Edwards Birmingham

Historian

Mrs. Orville Morgan Gadsden

Parliamentarian

Mrs. William G. Thuss Birmingham

Directors

Mrs. W. A. Cunningham Birmingham

Mrs. John M. Kimmey Elba

Mrs. J. O. Morgan Gadsden

Advisory Council

Dr. L. H. Clemmons, Chairman Cullman

Dr. W. G. Thuss, Sr. Birmingham

Dr. G. W. Newburn, Jr. Mobile

Dr. John M. Kimmey Elba

Dr. Ira Patton Oneonta

COMMITTEES

A. *Sponsored by the Woman's Auxiliary to the American Medical Association*

AMA-ERF—Mrs. Curtis Smith, Mobile

Bulletin—Mrs. W. A. Cunningham, Birmingham

Civil Defense—Mrs. R. K. Wilson, Aliceville

Community Service—Mrs. W. V. Crawford, Crossville

Health Careers—Mrs. James Sussex, Birmingham

International Health Activities—Mrs. John W. Webb, Montgomery

Legislation—Mrs. William Anderson, Tuscaloosa; Co-Chairman—Mrs. Peter Trice, Tuscaloosa

Members-at-Large—Mrs. John Boggess, Guntersville

Membership—Mrs. L. H. Clemmons, Cullman

Mental Health—Mrs. R. A. Dillard, Birmingham

Program—Mrs. E. J. Phillips, Decatur

Rural Health—Mrs. C. L. Salter, Talladega

Safety—Mrs. William Noble, Fort Payne, Co-Chairman—Mrs. Eugene Bradley, Centre

ORGANIZATION SECTION

WA-SAMA—Mrs. Felix Henley, Birmingham

B. *Sponsored by Woman's Auxiliary, Southern Medical Association*
Southern Projects—Mrs. Gilder Wideman, Birmingham

C. *Sponsored by the Woman's Auxiliary, Medical Association of the State of Alabama*
Archives and Exhibits—Mrs. Franklin Miles, Montgomery

Essay Contest—Mrs. William Rosser, Birmingham

Memorial—Mrs. Thomas Wright, Huntsville

Nominating—Mrs. John Kimmey, Elba

Press and Publicity—Mrs. Edwin Webb, Montgomery, Co-Chairman—Mrs. Kellie Joseph, Birmingham

Report Forms—Mrs. John Kimmey, Elba

Revisions—Mrs. Ben Byrd, Dothan, Co-Chairman—Mrs. John Kimmey, Elba

WAMASA News Editor—Mrs. Forrest Little, Jr., Montgomery

Assistant Editor—Mrs. Harry J. Till, Montgomery

Typist—Mrs. Robert Lightfoot, Montgomery

Circulation Manager—Mrs. Paul Nickerson, Sylacauga, Co-Chairman—Mrs. M. C. Holcomb, Jr., Birmingham

Yearbook—Mrs. John Rayfield, Sylacauga

D. *Montgomery County Committees for Convention:*

General Chairman—Mrs. Harry J. Till, Co-Chairman—Mrs. Frank W. Riggs

Publicity—Mrs. Edwin Webb

Registration—Mrs. Mervel V. Parker

Credentials—Mrs. William L. Smith

Hospitality—Mrs. Franklin Miles

Transportation—Mrs. Richard Garrett

Tour—Mrs. John Allen Jones

Reservations—Mrs. John Martin

10:00 P. M.—First General Session, Whitley Hotel, Civic Room

Call to Order—Mrs. W. R. Sutton

Invocation—Rev. J. Calvin Chestnutt

Auxiliary Pledge—Led by Mrs. E. Fred Campbell, Montgomery.

"I pledge my loyalty and devotion to the Woman's Auxiliary to the American Medical Association. I will support its activities, protect its reputation, and ever sustain its high ideals."

Introduction of Guests—Mrs. Sutton

Convention Rules of Order—Mrs. Harry J. Till

First Report of Credentials Committee—Mrs. William L. Smith

Report of Reading Committee—Recording Secretary

Annual Report of Officers

President-Elect—Mrs. L. H. Clemmons

Northwest District—Mrs. Walter Brower

Colbert—Mrs. J. F. Hensleigh

Cullman—Mrs. J. G. Daves

Jefferson-Bessemer—Mrs. Leroy Holt

Jefferson-Birmingham—Mrs. James Crenshaw

Lauderdale—Mrs. W. G. Butler, Jr.

Marion—Mrs. W. F. Gaba

Morgan—Mrs. Sidney Chenault

Pickens—Mrs. Emerson Blakney

Tuscaloosa—Mrs. J. E. Wheeler

Walker—Mrs. John Miller, III

Southwest District—Mrs. Jack Yeager

Baldwin—Mrs. Hyman Abrahamer

Dallas—Mrs. Carlos Ross

Escambia—Mrs. Herman Wood

Mobile—Mrs. Curtis Smith

Historian—Mrs. Orville Morgan

Business

Announcements—Mrs. Harry J. Till

Recess

1:00 P. M. Dutch Luncheon honoring Mrs. Paul Gray, President, Woman's Auxiliary to the Southern Medical Association and Past Presidents of the Woman's Auxiliary to the Medical Association of the State of Alabama, Montgomery Country Club, Mrs. W. R. Sutton, presiding.

Invocation—Mrs. William A. Daniel

Introduction of Guests—Mrs. Sutton

Greetings from MASA—J. G. Daves, M. D., President

Greetings from Southern Medical—Mrs. Paul Gray, Batesville, Arkansas

Fashion Show

3:00 P. M. Tour—Governor's Mansion and other points of interest.

The Scroll and Key Club of Montgomery, Alabama will sponsor a Cocktail party at 6:00 P. M., and a Dinner at 7:30 P. M. at the Montgomery

PROGRAM

Wednesday, April 22, 1964

4:00-5:00 P. M.—Pre-Convention Registration, Lobby, Whitley Hotel

Thursday, April 23, 1964

8:00-3:00—Registration, Lobby, Whitley Hotel

8:00-9:30—Pre-Convention Board Meeting, Dutch Breakfast, State Room, Whitley Hotel

9:50 P. M.—Woman's Auxiliary President reports to the Medical Association of the State of Alabama at Jefferson Davis Hotel.

ORGANIZATION SECTION

Country Club. Entertainment will be by Shearen Elebash at 9:00 P. M. Bus Service will be furnished from the Jefferson Davis Hotel to the Montgomery Country Club.

Friday, April 24, 1964

8:00-12:00—Registration, Lobby, Whitley Hotel

9:00 A. M.—Second General Session, Civic Room, Whitley Hotel

Call to order—Mrs. W. R. Sutton

Invocation—Mrs. L. W. Funderburg

Introduction of Guests—Mrs. Sutton

Memorial Service—Mrs. Thomas Wright

Annual Reports of Officers continued:

Northeast District—Mrs. Joe Denson

Blount—Mrs. C. V. Hendrix

Calhoun—Mrs. E. W. Branyon

Cherokee—Mrs. Jack Blackwell

DeKalb—Mrs. William Noble

Etowah—Mrs. J. D. Bush

Jackson—Mrs. Carl Collins

Madison—Mrs. B. B. Jordan

Marshall—Mrs. W. V. Crawford

Talladega—Mrs. C. L. Salter

Southeast District—Mrs. Walker Sorrell

Coffee—Mrs. Herbert Gibson

Covington—Mrs. C. N. Mathews

Elmore-Tallapoosa—Mrs. John Chapman

Geneva—Mrs. W. H. Blakeney

Houston—Mrs. Ben Byrd

Montgomery—Mrs. E. Fred Campbell

Pike—Mrs. J. H. Colley

10:00 A. M.—Second Report, Credentials Committee

New Business

Recommendations from Executive Board—Recording Secretary

Presentation of Budget—Mrs. H. Price Edwards

Report, Nominating Committee—Mrs. John Kimmey

Election of Officers

Election of Nominating Committee

Election of Delegates to National Convention

Installation of Officers, Mrs. Earl W. Roles, Regional Vice-President, Woman's Auxiliary to the American Medical Association, Prospect, Kentucky.

Presentation of President's Pin and Gavel—Mrs. Sutton

Presentation of Past-President's Pin—Mrs. John Kimmey

Inaugural Address—Mrs. Lowell Clemmons

Introduction of Committee Chairmen for 1964-65 and time of Post Convention Board Meeting—Mrs. L. H. Clemmons

Announcements—Mrs. Harry Till

1:00 P. M.—Luncheon honoring Mrs. Earl W. Roles, State Room, Whitley Hotel, Mrs. E. Fred Campbell presiding.

Invocation—Mrs. John Haynes

Introduction of Guests

Introduction of Essay Contest Winners

Address—Mrs. Earl Roles

Awards—AMA-ERF—Mrs. Curtis Smith

Archives and Exhibits—Mrs. Frank Miles

Remarks—Mrs. L. H. Clemmons

The Scroll and Key Club of Montgomery, Alabama will sponsor the President's Ball in the Davis Room of the Jefferson Davis Hotel. Cocktails will be served at 6:00 P. M., Dinner at 7:30 P. M. Jerry Lane and his Famous Orchestra from Jackson, Mississippi will play for the Ball.

CONVENTION RULES OF ORDER

1. There will be a registration fee of \$2.00.

2. All persons appearing on the program shall be seated in a reserved section at the front of the room.

3. Members of the voting body shall wear badges at all sessions of the convention.

4. When addressing the chair, the member shall rise, give her name and the name of county Auxiliary.

5. Unless notified to the contrary, each speaker shall be limited to two minutes and shall not speak more than twice on any question.

6. A timekeeper will notify each speaker when two minutes are up.

7. All motions shall be written, signed, and presented to the Recording Secretary.

8. Reports shall be read only by person making the report or her appointed delegate.

9. Visitors are welcome to all sessions of the convention but are requested to register and to sit apart from the voting body.

DEPARTMENT OF HEALTH

BUREAU OF LABORATORIES

Thomas S. Hosty, Ph.D., Director

January 1964

Examinations for intestinal parasites	551
Typhoid cultures (blood, feces, urine and other)	130
Brucella cultures	0
Examinations for malaria	0
Examinations for gonococci	1,686
Serologic tests for syphilis (blood and spinal fluid)	24,168
Darkfield examinations	6
Agglutination tests	1
Examinations for diphtheria bacilli and Vincent's	21
Complement fixation tests	30
Examinations for Negri bodies (smears and animal inoculations)	163
Water examinations	1,870
Milk and dairy products examinations	3,205
Examinations for tubercle bacilli	3,650
Miscellaneous examinations	4,580
*Total	40,061

*Dothan Branch Laboratory report not received in time to be included in this report.

BUREAU OF PREVENTABLE DISEASES

W. H. Y. Smith, M. D., Director

CURRENT MORBIDITY STATISTICS

1964

	Dec.	Jan.	*E E Jan.
Tuberculosis	66	78	115
Syphilis	100	136	115
Gonorrhea	239	333	323
Chancroid	2	3	3
Typhoid fever	0	0	1
Undulant fever	0	0	0
Amebic dysentery	1	1	2
Scarlet fever and strep. throat	62	169	118
Diphtheria	1	0	6
Whooping cough	10	6	9
Meningitis	8	4	9
Tularemia	0	2	1
Tetanus	1	2	2
Poliomyelitis	0	0	1
Encephalitis	0	0	2
Smallpox	0	0	0
Measles	8	96	148
Chickenpox	37	104	159
Mumps	26	127	133
Infectious hepatitis	23	35	39
Typhus fever	0	0	0
Malaria	0	0	0
Cancer	781	385	550
Pellagra	1	0	0
Rheumatic fever	8	12	16
Rheumatic heart	15	41	32
Influenza	136	198	507
Pneumonia	256	312	313
Rabies—Human cases	0	0	0
Pos. animal heads	0	3	0

As reported by physicians and including deaths not reported as cases.

*E. E.—The estimated expectancy represents the median incidence of the past nine years.

BUREAU OF VITAL STATISTICS

Ralph W. Roberts, M. S., Director

PROVISIONAL BIRTH AND DEATH STATISTICS, NOVEMBER 1963, AND COMPARATIVE DATA

Live Births Deaths Causes of Death	Number Registered During November 1963			Rates* (Annual Basis)		
	Total	White	Non-White	1963	1962	1961
Live Births	6,036	3,793	2,243	21.8	23.2	23.9
Deaths	2,297	1,524	773	8.3	9.0	8.8
Fetal Deaths	109	48	61	17.7	21.4	23.9
Infant Deaths—						
under one month	106	62	44	17.6	19.2	16.5
under one year	168	84	84	27.8	30.6	25.1
Maternal Deaths	2		2	3.2	7.7	3.0
Causes of Death						
Tuberculosis, 001-019	16	9	7	5.8	6.2	11.4
Syphilis, 020-029					1.8	1.5
Dysentery, 045-048	1		1	0.4	0.7	0.7
Diphtheria, 055	1		1	0.4		
Whooping Cough, 056						
Meningococcal infections, 057	1	1		0.4		
Poliomyelitis, 080,081	2	2		0.7	0.4	0.4
Measles, 085	1		1	0.4		
Malignant neoplasms, 140-205	303	220	83	109.3	120.3	116.7
Diabetes mellitus, 260	35	20	15	12.6	10.6	11.0
Pellagra, 281						
Vascular lesions of central nervous system, 330-334	327	210	117	118.0	123.9	123.7
Rheumatic fever, 400-402	1	1		0.4	0.7	1.5
Diseases of the heart, 410-443	773	546	227	278.9	294.4	296.7
Hypertension with heart disease, 440-443	118	50	68	42.6	45.9	52.3
Diseases of the arteries, 450-456	54	41	13	19.5	20.4	20.6
Influenza, 480-483	5	3	2	1.8	1.5	3.7
Pneumonia, all forms, 490-493	76	44	32	27.4	23.7	28.0
Bronchitis, 500-502	7	5	2	2.5	2.6	0.7
Appendicitis, 550-553	2	1	1	0.7	0.4	0.7
Intestinal obstruction and hernia, 560, 561, 570	12	8	4	4.3	5.8	4.4
Gastro-enteritis and colitis, under 2, 571, 0, 764	6	1	5	2.2	4.7	2.6
Cirrhosis of liver, 581	13	9	4	4.7	5.1	8.5
Diseases of pregnancy and childbirth, 640-689	2		2	3.2	7.7	3.0
Congenital malformations, 750-759	23	14	9	3.8	5.2	4.9
Immaturity at birth, 774-776	26	14	12	4.3	5.3	6.2
Accidents, total, 800-962	193	144	49	69.6	71.8	63.3
Motor vehicle accidents, 810-835, 960	115	89	26	41.5	36.4	33.9
All other defined causes	293	187	106	105.7	132.3	118.5
Ill-defined and unknown causes, 780-793, 795	124	44	80	44.7	42.6	37.5

*Rates: Birth and death—per 1,000 population

Infant deaths—per 1,000 live births

Fetal deaths—per 1,000 deliveries

Maternal deaths—per 10,000 deliveries

Deaths from specified causes—per 100,000 population

The Woman's Auxiliary

Dear Doctors:

Spring brings thoughts of the convention in Montgomery. Much planning is going on in every department to insure a good program. Remember how handy a hotel reservation can be and make yours now. We did try to work our schedule so that we could hear Dr. Luther Terry when he speaks to you but find that morning's program is very full, already.

We have begun doing things for the last time before convention. Attended the Association's last Public Relations Committee meeting before convention at the State Office recently, and found MASA in action, as always, a fascinating thing to watch. The Public Relations group was invited to sit jointly for a short time, with the Committee on Legislation which was meeting at the same time, and picked up some AMPAC pointers on the side.

Our last scheduled District meeting has been held, in the Southeast District and in Lee County in which we had no members at all before the meeting. This is Auburn-Opelika territory and we are now most pleased to have two brand new Members-at-large. Your president, Dr. J. G. Daves and his wife were there as they have been at our other two District meetings and Fall Workshop, also. This really gives us a lift. Quite a few Lee County doctors came to the meeting to hear Dr. Daves speak and we felt that the Southeast District Vice-Pres., Virginia Sorrell (Mrs. Walker) had done a very good job in planning and executing this meeting with the help of Blanche Huskey of Opelika who handled local arrangements. Clear blue skies that day found President-elect Frances Clemmons flying down from Cullman with her pilot husband.

As we write this our main emphasis is on the letter-writing campaign to senators and congressmen. The AMA's Council on Legis-



lative Activities deserves a medal for keeping us up to date on happenings and we are thankful for their aid. The weekly LEGISLATIVE ROUNDUP is most informative as to who is saying what in the King-Anderson hearings of the House Ways and Means Committee.

We took a special liking to the little pamphlet on how to write to senators and congressmen which the Legislative Committee had at their meeting in Montgomery and are trying to distribute this as widely as possible. Everyone needs names and addresses to help him write. And remember, the appeal you can make to an individual patient in the quiet of your office to help in this cause is most valuable.

May I ask you to be sure to take home to your wife the convention program which will come to you. Our Auxiliary program is printed in the back of this pamphlet and we would so appreciate your calling her attention to this.

We hope to see you at convention, that wonderfully exciting and informative time. Remember, our Fall Workshop passed a motion to concentrate in our publicity on the actual work accomplished by the Auxiliary, minimizing the social angle. We will try to put this into practice.

Faithfully yours,

Marlys R. Sutton

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Facts About Snakebites In Alabama

Henry M. Parrish, M. D., Dr. P. H.

and

Louis P. Donovan, M. S.

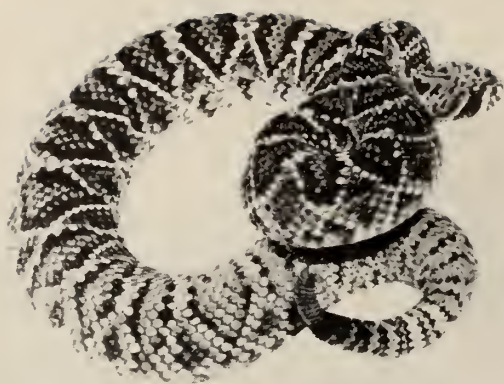
Poisonous snakebites are a problem of medical importance in Alabama. There were 14 deaths from snakebites in Alabama during the ten year period, 1950-1959.¹ Only the following states reported more snakebite deaths than Alabama during this period of time: Texas—24 deaths; Georgia—22 deaths; and Florida—20 deaths. The incidence of poisonous snakebites has not been determined previously for Alabama. The purpose of this study is to describe the epidemiological facts about poisonous snakebites in Alabama, to relate some medical findings associated with these bites, and to briefly review current concepts of snakebite treatment.

From the Department of Community Health and Medical Practice, School of Medicine, University of Missouri, Columbia, Missouri.

This investigation was supported in part by Public Health Service research grant GM 11268-02 from the Division of General Medical Sciences, Public Health Service.

POISONOUS SNAKES

Alabama has a more extensive fauna of poisonous snakes than any other state in the East South Central Region (Kentucky, Tennessee, Mississippi and Alabama) of the United States. Conant² lists the following species and sub-species of poisonous snakes as indigenous to Alabama: the timber rattlesnake (*Crotalus horridus horridus*), the cane-brake rattlesnake (*Crotalus horridus atricaudatus*), the eastern diamondback rattlesnake (*Crotalus adamanteus*), the dusky pigmy rattlesnake (*Sistrurus miliarius barbouri*), the Carolina pigmy rattlesnake (*Sistrurus miliarius miliarius*), the western pigmy rattlesnake (*Sistrurus miliarius streckeri*), the northern copperhead (*Agkistrodon contortrix mokeson*), the southern copperhead (*Agkistrodon contortrix contortrix*), the eastern cottonmouth moccasin (*Agkistrodon piscivorus piscivorus*), the western cottonmouth (*Agkistrodon piscivorus leucostoma*), and the eastern coral snake (*Micrurus fulvius*



RATTLESNAKE



COPPERHEAD



CORAL SNAKE



COTTONMOUTH MOCCASIN

FIGURE 1

fulvius). Thus, there are six species or sub-species of rattlesnakes, two of cottonmouth moccasins, two of copperheads, and one species of coral snakes.

Alabama has all four of the major kinds of poisonous snakes in the United States. With the exception of the coral snake, all of the venomous snakes in Alabama are pit vipers. They are so named because of a characteristic pit which is located between the eye and the nostril on each side of the body. Pit vipers also are identified by elliptical pupils and by two well-developed fangs which protrude from the maxillae when the snake's mouth is opened. Rattlesnakes have rattles which are attached to their tails. Copperheads, cottonmouth moccasins, and harmless snakes do not have rattles. The copperhead has a

reddish-brown head and dark, hourglass-shaped crossbands on the body. Harmless snakes do not have facial pits, they have round rather than elliptical pupils, and while they have teeth, they lack fangs.

The coral snake is a beautifully colored small snake which has broad rings of scarlet and black separated by narrow rings of yellow. An easy way to remember this is, "red next to yellow will kill a fellow." It is important to remember that the coral snake's *snout is always black*. Several harmless snakes resemble coral snakes but their snouts are usually gray or red. Coral snakes are the only poisonous snakes in this country with round pupils. They lack facial pits. See Figure 1 for photographs of Alabama's poisonous snakes.

FACTS ABOUT SNAKEBITES IN ALABAMA

METHODS OF STUDY

A questionnaire and letter explaining the purpose of this study were mailed to a "selected" group of Alabama hospitals listed in Hospitals (Journal of the American Hospital Association) Guide Issue. The hospitals selected for this study were general hospitals, children's hospitals, and college infirmaries. Army, Navy, Coast Guard, Public Health Service, Air Force, and Veterans Administration hospitals also were sent questionnaires. Maternity, tuberculosis, and mental hospitals were omitted as they would not be expected to treat snakebite victims. A total of 115 Alabama hospitals comprise the study group. Each hospital was requested to report all inpatients admitted to the hospital for snakebite treatment during 1958 and 1959.

Most hospitals do not code and tabulate the diagnoses of emergency room and outpatient clinic visits. Since some snakebite victims are not admitted to the hospital as inpatients, it seemed essential to ask a sample of practicing physicians how many snakebite victims they treated on both an outpatient (office, home, emergency room, etc.) and on an inpatient basis. Previous surveys,^{3,4} have shown that most people with venomous snakebites are treated by general practitioners, surgeons, internists, pediatricians, and orthopedic surgeons. Therefore, a random sample of one-third of all the Alabama physicians in these categories of practice who were listed in the A. M. A. American Medical Directory were sent questionnaires.

Death certificates for fatal snakebite cases were obtained from the Alabama Department of Public Health.

RESULTS

This study is based on questionnaires returned by 98 (85.2 per cent) of 115 Alabama hospitals. It is supplemented by questionnaires returned by 245 (66 per cent) of 369 practicing physicians in the State and by five death certificates provided by the Alabama Department of Public Health.

INCIDENCE—Alabama hospitals reported a total of 127 inpatients treated for poisonous snakebites during 1958 and 1959. There were 59 cases in 1958 and 68 cases in 1959—an average of 63.5 cases per year. Of 127 snakebites, case reports were received for 106 bite patients and only numbers of bites were reported for 21 cases. *All of the analyses in this paper, excluding the estimate of incidence, were based on the 106 case reports received from hospitals.*

Physicians' reports, when adjusted to account for all Alabama physicians in the practice categories mentioned, indicated that approximately 108 inpatients and 100 outpatients were treated for snakebite accidents each year. This difference between the inpatient reports by hospitals and the estimated inpatients treated by physicians can be accounted for by the following facts: (1) seventeen (15 per cent) of the hospitals did not participate in the study; (2) eight of the counties from which physicians reported bites did not have hospitals listed in the Hospitals Guide Issue; and (3) there was evidence of under reporting of snakebite cases from seven hospitals.

Physicians in the eight less populated counties not having a hospital listed in the Hospitals Guide Issue reported that they treated 24 inpatients and 29 outpatients in small clinics, infirmaries and hospitals. Physicians in counties from which hospital snakebite cases were received estimated that 68 inpatients and 42 outpatients were treated per year. This estimate of 68 inpatients is reasonably close to the average of 63.5 inpatients reported by hospitals in these counties.

Taking all of these various reports into consideration, we estimate that an average of about 208 people (108 inpatients and 100 outpatients) are treated for poisonous snakebites every year in Alabama, an incidence of 6.37 bites per 100,000 population per year.

GEOPATHOLOGY—The geographical distribution of snakebites reported in Alabama during 1958 and 1959 may be seen in

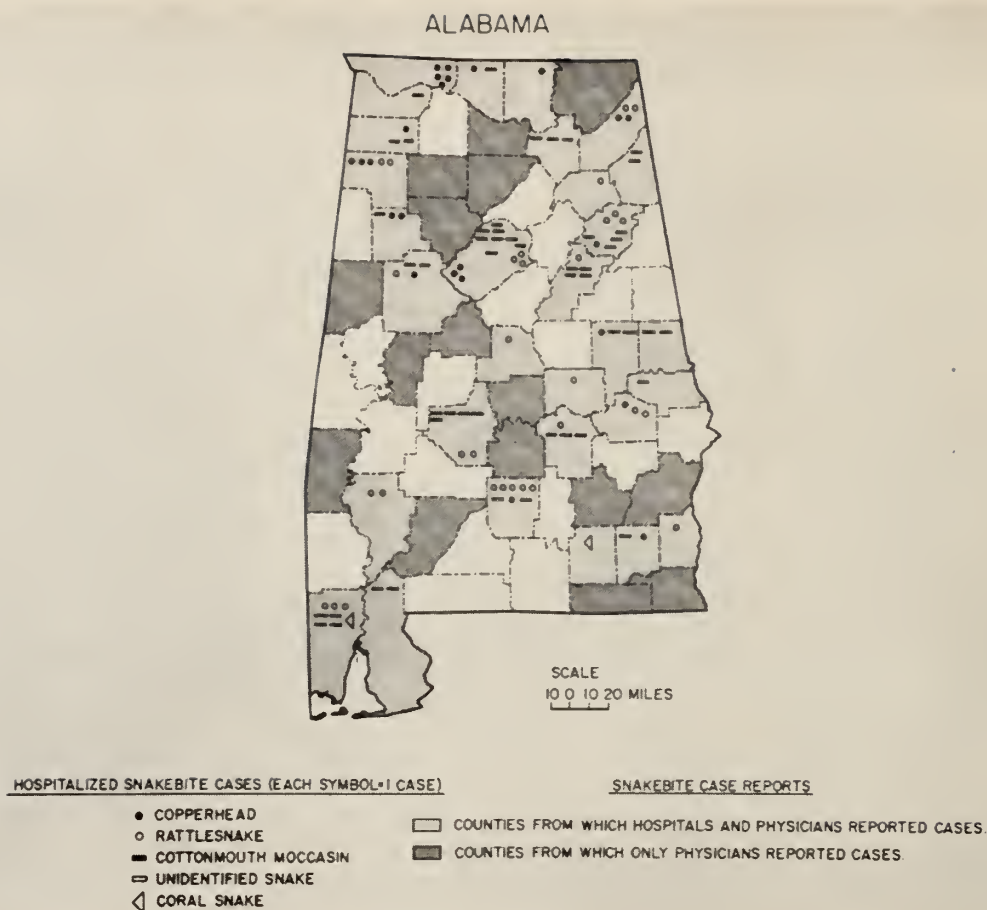


FIGURE 2

Figure 2. The lightly shaded counties are those from which hospitals reported in-patients treated for snakebites. An appropriate symbol is used to mark each hospitalized patient who was bitten by a specific kind of snake. The darker shaded counties represent counties from which physicians reported snakebite cases, but from which no snakebite cases were reported by hospitals.

Of 106 snakebites, 25 (23 per cent) were inflicted by rattlesnakes, five (five per cent) by pigmy rattlesnakes, 24 (23 per cent) by copperheads, seven (seven per cent) by cottonmouth moccasins, two (two per cent) by coral snakes, and 43 (40 per cent) by unidentified poisonous snakes. Twenty-one of the 24 copperhead bites were reported from

the northern one-half of the State, although copperheads have a statewide range. Bites by rattlesnakes were reported from all areas and were well distributed throughout Alabama. Cottonmouth moccasin bites were reported from Mobile, Baldwin, Butler, Chambers, Jefferson and Calhoun Counties. This pattern fits Conant's² geographical range for cottonmouth moccasins perfectly. Cottonmouths are not found in the northeastern part of the State. Coral snake bites were reported from Mobile and Coffee Counties which lie in the range for coral snakes.

Figure 2 shows four snakebite areas in Alabama: (1) the entire northern one-third of the State; (2) the east central region centering around Dallas and Montgomery

FACTS ABOUT SNAKEBITES IN ALABAMA

Counties; (3) the southeastern part of the state centering around Coffee, Dale, and Henry Counties, and (4) southwestern Alabama around Mobile, Baldwin, and Clarke Counties.

TEMPORAL RELATIONSHIPS—The monthly distribution of snakebites is shown in Table 1. No snakebites occurred during the colder months of the year—December, January, and February. One bite happened in March and two in April. However, one

11:59 A. M., 23 bites; 12:00 noon-2:59 P. M., 11 bites; 3:00-5:59 P. M., 27 bites; 6:00-8:59 P. M., 24 bites; 9:00-11:59 P. M., five bites. There were no bites reported from midnight to 6:00 A. M.

BITE VICTIMS—There were 54 white males, 27 white females, 16 non-white males and seven non-white females admitted to Alabama hospitals for snakebite treatment during 1958 and 1959. The race and sex of two patients were not recorded. All of the non-whites were Negroes. Using the 1960 census data for the population of Alabama, the biannual snakebite rates per 100,000 population were: 4.80 for white males; 2.33 for white females; 3.42 for non-white males; and 1.36 for non-white females. Thus, white males had higher snakebite treatment rates than non-white males and white females had higher rates than non-white females. The bite treatment rates for males of both races were more than two times as high as the rates for females.

The age distribution of Alabama snakebite victims is shown in Table 2. By far the largest

TABLE 1

SEASONAL DISTRIBUTION OF VENOMOUS SNAKEBITES IN ALABAMA, 1958 AND 1959

Month	No. Bites	Month	No. Bites
January	0	July	18
February	0	August	23
March	1	September	27
April	2	October	4
May	7	November	3
June	21	December	0

of these bites occurred while the victim was deliberately handling a snake. Most of the bite accidents took place from May through September when 96 (91 per cent) of all snakebites occurred. August and September represent the height of the annual poisonous snakebite epidemic in Alabama. Similar "seasonal epidemics" of snakebites have been observed in Florida and New England.^{3,4}

There were two peaks during the day when most snakebite accidents happened. These were the three hour period from 9:00-11:59 A. M. when 23 (22 per cent) people were bitten and the six hour period from 3:00-8:59 P. M. when 51 (48 per cent) were bitten. The number of bites by three hour periods were as follows: 6:00-8:59 A. M., 10 bites; 9:00-

TABLE 2

AGE DISTRIBUTION OF HOSPITALIZED SNAKEBITE VICTIMS IN ALABAMA, 1958 AND 1959

Age Group (years)	Population at risk*	No. Bites	Rate per 100,000**
0-9	758,261	34	4.48
10-19	629,772	31	4.92
20-29	402,513	10	2.48
30-39	412,916	11	2.66
40-49	385,743	5	1.30
50-59	307,770	5	1.62
60-69	208,639	4	1.92
70 or more	161,126	5	3.10
Not stated	—	1	—

*Based on the 1960 Census of the Population of Alabama.

**These rates are based only on hospitalized patients for whom information was available.

FACTS ABOUT SNAKEBITES IN ALABAMA

number of bites happened to children up to nine years of age, 34 bites, and those 10-19 years of age, 31 bites. Indeed, 61 per cent of all snakebite accidents happened to children and young adults less than 20 years of age. Age—specific bite rates are much more meaningful since they take into account the population at risk in a particular age group. The highest biannual bite rates per 100,000 population were found in the following age groups: 10-19 year group, 4.92; 0-9 year group, 4.48 and 70 year or more group, 3.10. The lowest rate was for the 40-49 year age group.

An analysis of the occupations of the patients showed that 58 were children, 13 were housewives, 13 were farmers or farm laborers, five were laborers other than farm laborers, two were unemployed and two were retired. The occupations of 13 people were not classified.

ACTIVITY AND PLACE—Twenty-nine snakebites occurred while children were playing, 15 while playing in their own yards and 14 while playing elsewhere. Eleven bites happened to people while they were working on farms, six while the victim was handling a poisonous snake, six while working or walking in the yard, four while hunting or fishing, four while engaged in recreation other than hunting and fishing, three while picking up logs or wood, and three while walking near a highway. The activity at the time of the bite was not coded for the remaining patients.

The place where the bite happened is closely related to the patient's activity at the time of the bite. By far the largest number of snakebites, 21, happened right in the patient's own yard. Eleven took place on a farm or ranch, 11 near or in water, five in or under a house or building, five in the woods, three near a highway, three in a field away from the house, and two in a field near the house. The place the bite happened was not listed for the remaining cases.

SITE AND SEVERITY—The anatomical sites where poisonous snakes inflicted their bites on human beings are shown in Table 3. The sites of the bites were recorded for

TABLE 3
ANATOMICAL SITES OF BITES INFLICTED
BY VENOMOUS SNAKES IN ALABAMA,
1958 AND 1959

Anatomical Site of Bite	Side of Body		Total No. of Bites
	Right	Left	
Head, face and neck	0	1	1
Trunk, front	0	0	0
Trunk, back	0	1	1
Upper arm	1	0	1
Forearm	0	1	1
Hand	9	7	16
Fingers	13	3	16
Upper leg	0	0	0
Lower leg and ankle	17	19	36
Foot	15	11	26
Toes	3	1	4
Not stated	—	—	4

102 out of 106 patients. Of the cases where the site was known, 100 (98 per cent) were inflicted on the extremities, 34 (33 per cent) on the upper extremities and 66 (65 per cent) on the lower extremities. One seven year old boy was bitten on his upper lip while playing out-of-doors and another four year old child was bitten through his pants on his left buttock while playing in the yard. The fingers and hands were the parts most often bitten on the upper extremities. The lower legs including the ankles and the feet were the parts bitten most frequently on the lower extremities. The right side of the body was bitten 58 (57 per cent) times and the left side was bitten 44 (43 per cent) times. This difference in the side bitten was most pronounced in the upper extremities.

A modification of the clinical classification of pit viper venenations by Wood, Hoback and Green⁵ was used to determine the severity of bites. Bites were classified as follows:

Grade O—*No venenation*. Fang or tooth marks, minimal pain, less than 1 inch

FACTS ABOUT SNAKEBITES IN ALABAMA

of surrounding edema and erythema. No systemic involvement.

Grade I—*Minimal venenation*. Fang or tooth marks, severe pain, one-five inches of surrounding edema and erythema in first 12 hours after bite. No systemic involvement usually present.

Grade II—*Moderate venenation*. Fang or tooth marks, severe pain, 6-12 inches of surrounding edema and erythema in first 12 hours after bite, systemic involvement may be present—nausea, vomiting, giddiness, shock or neurotoxic symptoms.

Grade III—*Severe venenation*. Fang or tooth marks, severe pain, more than 12 inches of surrounding edema and erythema in first 12 hours after bite, systemic involvement usually present as in Grade II.

The classification of venenation (venom poisoning) for 106 hospitalized cases was: 23 (22 per cent) were Grade O; 27 (25 per cent) were Grade I; 19 (18 per cent) were Grade II; 20 (19 per cent) were Grade III; and the severity was not classified for 17 (16 per cent) of the cases. There were five deaths among the 106 cases in this series, providing a case-fatality rate of 4.7 per cent. When one realizes, however, that approximately 48 per cent of all poisonous snakebite cases in Alabama are managed on an outpatient basis, the overall case-fatality rate probably is about 2.4 per cent. This is confirmed by the fact that from 1950 through 1959 there were 14 snakebite deaths in Alabama—an average of 1.4 deaths per year. Of the five fatal cases, two people were killed by rattlesnakes, one by a cottonmouth moccasin, one by a coral snake, and one by an unidentified snake. One of the rattlesnake deaths resulted from the victim handling a rattlesnake during a religious ceremony. This patient did not seek treatment and was pronounced "dead-on-arrival" at a hospital.

Nineteen per cent of the hospitalized snakebite cases in Alabama were Grade III—severe venenations, but only 30 per cent of the bites

were reported to be inflicted by rattlesnake species. By way of contrast, 20 per cent of Florida snakebite cases were Grade III venenations and about 50 per cent of the bites were inflicted by rattlesnakes. In general, rattlesnakes produce more severe venenations than do copperheads and cottonmouth moccasins. In 40 per cent of the Alabama snakebite cases the offending snake was not identified. Figure 2 shows that many of the bites by unidentified snakes occurred in counties where rattlesnake bites also were reported. It seems very likely in these counties that many of the bites by unidentified snakes were actually inflicted by rattlesnakes. This would help explain the relatively high percentage of Grade III venenations in Alabama.

TREATMENT

The current treatment of North American pit viper (rattlesnake, cottonmouth moccasin and copperhead) bites includes both minor surgery and medical forms of treatment. A constricting band (tourniquet) should be applied lightly to the involved extremity several inches proximal to the bite. It should *not* occlude the arterial circulation and should be released every 10-15 minutes for a minute or two. As edema resulting from venom poisoning spreads, the constricting band should be advanced to keep just ahead of the swelling. The purpose of the constricting band is to impede the spread of venom until incision and suction can be used to remove the venom mechanically and/or until antivenin can be administered to neutralize the venom.

Incision and suction (I. S.) is effective in removing venom from experimental animals up to about 120 minutes after the venom is injected. The sooner it is used, the larger the amount of venom that can be removed. Suction should be used for about one hour. We have found the suction cups supplied in the Cutter and the Becton-Dickinson snakebite first-aid kits effective for removing pit

viper venom. Incisions, one-quarter inch long and one-eighth to one-quarter inch deep, are made into the subcutaneous tissues over the fang punctures. A few (3-5) additional incisions may be made in the surrounding edematous tissues. A large number of incisions is not needed. Immobilization aids in limiting the spread of venom. However, if one must decide between immobilization or seeking prompt medical treatment, the latter should be sought.

The "3 A's" (antivenin, antibiotics, and tetanus antitoxin and/or toxoid) are recommended, in addition to I. S., in treating all serious pit viper bites. Antivenin *Crotalidae* Polyvalent (Wyeth) is effective in neutralizing the venoms of all North American pit vipers. It is not protective against coral snake venom. Since antivenin is manufactured from horse serum, the patient should receive a skin test before antivenin is given. For Grade I and Grade II venenations antivenin may be administered in the deltoid or gluteus muscles. In Grade III venenations, antivenin diluted in 1000cc. of normal saline may be given intravenously. Studies with radioisotopes have shown that antivenin accumulates at the site of the bite more rapidly after intravenous administration than after intramuscular administration.⁶ We have found the following amounts of antivenin useful in treating the various Grades of venenation: Grade O (no venenation) requires no antivenin; Grade I (minimal venenation) may require 10cc. (one ampoule) of antivenin; Grade II (moderate venenation) requires 30-40cc. of antivenin; and Grade III (severe venenation) requires 50cc. or more of antivenin.

Since snakes' mouths and venoms may harbor pathogenic organisms, antibiotics and tetanus antitoxin and/or toxoid should be given prophylactically. Gram negative organisms predominate, hence a broad spectrum antibiotic is indicated. Penicillin used by itself is not adequate treatment.

Cortisone and ACTH do not affect the survival rate of animals poisoned with pit viper venoms. They probably should not be used

during the first few days after venenation, although they may be beneficial later in treating serum sickness resulting from antivenin therapy. Antihistamines are contraindicated as they shorten the survival time of animals poisoned with pit viper venoms. Shock resulting from venom poisoning should be treated with infusions of blood, plasma, saline solution and vasopressor drugs. Meperidine hydrochloride and other analgesics may be given to relieve pain. Recently there have been reports of excessive tissue necrosis and amputations associated with cold therapy such as packing an extremity in ice or using ethyl chloride. In our opinion, cold therapy should not be used in treating pit viper bites.

SUMMARY

An estimated 208 people are treated for bites by poisonous snakes every year in Alabama. Of these, 108 (52 per cent) are admitted to hospitals for treatment and 100 (48 per cent) are treated on an outpatient basis in hospital emergency rooms and physicians' offices.

Of 106 snakebite victims treated in Alabama hospitals during 1958 and 1959, 25 (23 per cent) were bitten by rattlesnakes, five (five per cent) by pigmy rattlesnakes, 24 (23 per cent) by copperheads, seven (seven per cent) by cottonmouth moccasins, two (two per cent) by coral snakes, and 43 (40 per cent) by unidentified poisonous snakes. A seasonal "epidemic" of snakebites occurred in Alabama with 96 of the 106 cases reported from May through September.

Males had higher bite rates than females and white people had higher rates than non-whites. The occupational groups most frequently bitten were children—58, housewives—13, and farmers 13. Ninety-eight per cent of the bites were inflicted on the extremities—33 per cent on the upper extremities and 65 per cent on the lower extremities. There were five deaths among the 106 hospitalized

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snakebite victims, a case-fatality rate of 4.7 per cent. The case-fatality rate for all snakebite cases (hospitalized plus non-hospitalized) was about 2.4 per cent. Current snakebite treatment is discussed.

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PARALYSIS OF THE DIAPHRAGM SECONDARY TO HERPES ZOSTER

T. C. Donald, Anniston, Alabama

Asymptomatic unilateral paralysis of the diaphragm, on rare occasions, is a motor manifestation of herpes zoster. This condition was first reported by Halpern and Cowner in 1949. I shall discuss herpes zoster with emphasis upon the motor manifestations. A case report describes paralysis of the diaphragm, secondary to herpes zoster.

Herpes zoster, commonly called "shingles," is an acute infectious disease caused by a virus. The manifestations of the disease are usually limited to pathology involving the skin and nervous system, although not infrequently the globe of the eye may be affected in those cases with involvement of the fifth cranial nerve. Infection with the virus of herpes zoster is characterized by unilateral segmental inflammation of the posterior root ganglions or extramedullary ganglions of the cranial nerves. Usually accompanying this nerve involvement will be a painful fascicular eruption of the skin along the peripheral distribution of the involved nerve. On rare occasions, herpes zoster has produced an encephalitis or diffuse myelitis. The regional lymph nodes generally show an acute inflammatory reaction. The skin vesicle is confined to the epidermis. The margin of the vesicle usually contains epithelial cells undergoing degeneration and large numbers of nucleated giant cells with each nucleus containing an

inclusion body. Healing usually begins within three to four days after the development of the vesicle with the development of an inflammatory reaction. Herpes zoster may appear at any age, but usually strikes middle-aged or elderly individuals.

The pathology is inflammation with hyperemia and marked infiltration of lymphocytes in the perivascular spaces. The location of the lymphocytic infiltration is of greatest intensity in the posterior root ganglia or the gasserian or geniculate ganglia. However, the posterior great columns of the cord and the sensory trigeminal and facial nuclei are also involved.

It is said that over 75 per cent of cases occur between the second dorsal and the second lumbar vertebra. Involvement of the fifth cranial nerve is next in frequency. Involvement of the geniculate ganglion is often accompanied by a paralysis of the seventh facial nerve. Paralysis is rare in herpes zoster involving the trunk, but occasionally is seen in those cases involving the cervical distribution. The muscles supplied by the motor roots, corresponding to the segmental distribution of the eruption, show a flaccid paralysis with absence of deep tendon reflexes. Involvement of the upper extremity can be disabling for long periods following the

acute manifestation, though the flaccidity and atrophy usually recedes over a period of months. Generally, the severe pain, accompanying the onset of the eruption and for some time following, proves the most serious problem. The total course of the disease from onset to recovery varies from two to six weeks. A serious complication is intractable pain in the distribution of the preceding eruption. This post-herpetic pain is continuous, sharp or burning, and neuralgic in character. Some believe the post-herpetic pain represents a centrally irritated process in the posterior great columns of the cord or sensory medullary nuclei and is not due to post-herpetic neuritis.

This paper is primarily concerned with the motor manifestations of herpes zoster infection. Facial palsy is perhaps the most common of the motor lesions; ocular motor paresis is also quite common. Paralysis of the trochlea and abducens is occasionally associated with the ocular motor involvement. Although the paresis involved in these areas is usually transient, it may be permanent.

Motor paralysis of the spinal root distribution has been reported less commonly. Broadbent in 1866, first reported a case of herpes zoster of the arm and neck in which paralysis of the corresponding motor nerves of the brachial plexus occurred. Since this condition was first described by Broadbent, there have been numerous reports of paralysis complicating herpes involvement of the cephalic and cervical distribution, but very few cases of paralysis complicating herpes zoster involvement of the thoracic and lumbar distribution. Possibly this can be explained by the fact that accurate diagnosis of intercostal involvement is most difficult to establish. Our present case concerns the paralysis of the phrenic nerve as a motor manifestation of herpes zoster.

CASE REPORT

B. H., a white female, age 72, was seen in my office on October 21, 1957, complaining of a rash and pain in the left supra-clavicular

area and the left side of the neck of 48 hours duration.

This patient's past history revealed that her general physical health until 1952 had always been excellent. For about five years prior to 1957, this patient had been known to have severe essential hypertension and during the year prior to March of 1958, there had been frequent episodes of classical angina, always precipitated by exertion or emotional upset. She usually could obtain prompt relief from the anginal pain by taking nitroglycerin sublingually. During the several months prior to October of 1957, she had felt unusually well. There was no history of orthopnea or any dyspnea except that which could be expected from exertion. Routine physical examination in 1957 had revealed no abnormalities other than a hypertension of 190/90 and rolling and thickening of the peripheral arteries consistent with changes of peripheral arteriosclerosis consistent with the patient's age. A routine chest X-ray taken on August 13, 1956 had been interpreted as normal except for minimal left ventricular enlargement with the transverse diameter of the heart within the upper limits of normal.

The patient stated that about three days prior to coming to my office, she had developed a burning of the skin in the left third cervical sensory segment. On the following day, the pain became excruciating and any pressure, even though light, over the left side of the neck and supra-clavicular area, would produce sharp, shooting pains. On the day before she came to the office, a vesicular eruption, typical of herpes zoster, was noted over the left supra-clavicular area. The patient denied any fever, chills, or exposure to known infections. The primary concern of the patient was to obtain some relief of the pain. A diagnosis of "shingles" had already been apparently correctly made by the patient's sister on the previous day.

Physical examination revealed a healthy appearing but elderly white female who did not appear to be in any distress. There was no evidence of dyspnea. The blood pressure was recorded as 170/100. Examination of the ears, nose, and throat was essentially normal.

The neck was supple, no lymphadenopathy was noted. Examination of the heart revealed a grade II systolic murmur in the fourth left interspace adjacent to the sternum and over the aortic area. The lungs were resonant throughout and no rales, rhonchi or wheezing were noted. The vesicular rash which was present in the left supra-clavicular area was characteristic of herpes zoster. The patient was advised that she did indeed have "shingles" and was given a prescription of aspirin with codeine for pain and was told to use calamine lotion over the area of the rash.

The patient returned unexpectedly three weeks later complaining of marked dyspnea with the slightest exertion. The onset of the dyspnea had begun a few days following her previous visit. There had been no edema of the lower extremities, swelling of the abdomen or paroxysmal nocturnal dyspnea. The patient had noted, however, that angina with exertion was more frequent and severe, and she required more than one nitroglycerin on occasions in order to obtain relief of anginal pain. On questioning, she admitted to still having some pain in the left supra-clavicular area but this was not so severe. The vesicular rash had gradually improved, and the patient had not used any calamine lotion or taken any codeine during the previous few days.

Physical examination at this time revealed redness and scaling of the skin at the site of the previously noted vesicular rash. Light pressure over these areas did not evoke painful stimuli. Examination of the chest revealed absence of the breath sounds in the lower left chest posteriorly. Percussion of this area revealed absence of any diaphragmatic excursion. The right lung was resonant throughout and no rales were heard on auscultation. Examination of the heart was not remarkable in that the rhythm was regular with a rate of 78 per minute. The previously noted murmur was unchanged. The patient did not have a gallop rhythm. Examination of the abdomen did not reveal any ascites or hepatomegaly.

A chest X-ray revealed marked elevation of the left diaphragm. Fluoroscopy of the

chest confirmed the impression of paralysis of the diaphragm on the left side. There was noted to be paradoxical movement with marked rising of the diaphragm on inspiration and descension on expiration. There was no X-ray or fluoroscopic evidence of pulmonary parenchymal disease.

A diagnosis of paralysis of the left diaphragm secondary to herpes zoster was felt to be the most likely cause. The patient has been followed at frequent intervals during the past five years. The paralysis of the diaphragm has persisted and at this time is thought to be definitely permanent. In 1959, the patient's angina became much worse with marked ST-T changes in the precordial leads. She was given I-131 to produce myxedema. During the past three years since I-131 therapy, the patient has had very little angina and at the present writing is relatively asymptomatic. Therapy during the past two years has required thyroid in amounts of 1 gr. daily.

COMMENTARY

Paralysis of the diaphragm will result when there is injury to the phrenic nerve. The phrenic nerve is the only motor nerve of the diaphragm. It arises from the third, fourth and fifth cervical segments.

The concomitant onset of paralysis of the left diaphragm with the sensory involvement of the cervical third and fourth segments with herpes zoster, suggests that we have had phrenic (motor) paralysis secondary to the infection of these root segments with herpes zoster. This condition although reported previously is quite rare and it is felt that this case should be added to the literature.

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History of Orthopedic Surgery In the State of Alabama

David G. Vesely, M. D.

Indian inhabitants of North America were apparently Asiatic in origin and came across the Siberian-Alaskan land bridge in the Neolithic period or roughly 10,000 years ago. The first Indian inhabitants of Alabama swept down from the North. Whether they displaced any population which was then present is not known.

There continue to be stories of pre-Columbian white men, possibly Norse in origin, in the Southeast United States area. There is no historical or archaeological evidence of any medical or orthopedic devices which they used. The Creek Indians were apparently well established in Alabama at the time of the early Spanish explorations which came in from the Gulf coast. The Creek Indians' attitude toward orthopedic surgery and trauma differed a little from that of other Indians. Congenital deformities were never seen among Indian children. Children with such deformities were disposed of after birth. "You can depend on this and know that any deformity in an adult Indian was acquired by the fierce warfare which all braves eagerly sought."⁸ Apparently crude splints were applied for extremity fractures and manual straightening of the extremity was employed. No studied medical technique was employed by the medicine men. In compound wounds the patient lived or died on nature's bountiful healing, plus possibly the best of all surgical techniques, rest of the part. Adult males captured in raiding war parties were put to death or tortured to death, thus presenting no hospitalization problem in warfare. There is

no history or evidence of skull trephine for head injuries in this area. The Creek Indians, as other Indians, had a fair knowledge of herbs. There is no evidence that any narcotic plant was available. Endurance of pain without flinching was woven into the pattern of the Indian brave from childhood so that the pain of fracture setting was stoically endured.

Orthopedic surgery from the time of the Revolutionary War until the War Between the States remained primitive in character. The earliest practitioners used wooden splints taped together with muslin for closed upper extremity fractures. The use of the triangular sling when the patient could be ambulatory was an ancient device. Prior to the wide use of the X-ray from 1900, the main criteria for success was primarily, function of the part, secondarily, straightness of the limb. By these criteria, most practitioners were "good fracture men." Fractures of the femur in rural areas, even until World War I, were treated with tape traction in a wooden trough. Although plaster of paris had been discovered in 1780, it was not used widely for fracture fixation until the early 1900's. Compound extremity injuries were, more often than not, subject to amputation, and rightfully so when one considers that death from gangrene was almost certain before the days of debridement. A lack of anesthesia, until Crawford Long's discovery of ether in 1847, prevented any but the most courageous from performing anything but the most minor manipulation or hasty amputation. There is no record of any

particular advances being made during the War Between the States in the state of Alabama. Amputation continued to be the treatment of choice for compound fractures. Pus was still regarded as laudable until the time of Lister.

The earliest areas of medical attention in Alabama prior to 1860 were centered about Mobile, Selma, and Tuscaloosa, which were the most populous towns. Chief among the many outstanding general surgeons produced by Alabama was Marion Sims. While famous as a "women's surgeon," he did all manner of practice and was one of the earliest surgeons to do satisfactory orthopedic surgery.⁵ Dr. Seale Harris, in 1949 at the age of 79, fell down his ancestral attic stairs and fractured his pelvis and right hand. He was under the care of Dr. John D. Sherrill, Sr. at this time and the author was in residency training at the University Hospital. Dr. Seale Harris related many interesting tales of early Alabama medicine.

During the period from the end of the War Between the States until World War I, orthopedic surgery was not a distinct entity in Alabama. The bulk of orthopedic problems were handled by the general practitioners. Well founded fear of bone infections prevented the extensive open orthopedic procedures at this time. Osteomyelitis, up until the time of penicillin, and the sulfa drugs, was a dreaded disease. The well to do were able to seek care in the large Eastern cities including the outstanding Johns Hopkins Medical School which was established in 1890. From the very beginning Halstead had done meticulous orthopedic surgery at Johns Hopkins.

In the Spanish American War Alabama's most famous medical son, General Gorgas, developed the pattern of medical and surgical care and sanitation in the tropics which was subsequently used during the building of the Panama Canal. A young Virginian, named Lloyd Noland, under General Gorgas, learned much medical lore which was used in the founding of the employees hospital and medical system for the Tennessee Company in the period 1914 to 1919. Bone graft surgery

in America began with Albee and Hibbs in New York in the period of 1909 to 1911.

World War I brought the dawn of orthopedic surgery as a specialty to the United States and as the war ended to Alabama. Dr. E. Lawrence Scott who secured his training in Boston was the first orthopedist in Birmingham, and according to Dr. Conwell, was teaching orthopedics to the junior and senior medical students in the old Birmingham Medical School in 1911. Two of his students were H. Earle Conwell, born in Oakman, Alabama and John D. Sherrill born in Hartselle, Alabama. Dr. Scott was apparently on good terms with the leading orthopedists of the day, Dr. Bruce Gill, Golthwaite and Lovett. Dr. Scott was, like these men, a buckle and brace orthopedist. In 1917 among the 2000 young doctors dispatched overseas as so-called "cannon fodder" for the British army were Drs. Conwell and Sherrill who graduated from the Birmingham Medical School in the class of 1915 and interned at the Hillman Hospital in 1916. Both doctors gained great experience and started on their chosen specialty in World War I. On the Steamship Baltic, Dr. Golthwaite and Osgood, leading orthopedists at the time from Boston, were looking for orthopedists and Dr. Conwell expressed his desire to sign with them. This was a fortunate signature as Dr. Conwell was later transferred to the service of Sir Robert Jones, a great English pioneer of orthopedic surgery. Dr. Conwell served two years in England under Sir Robert Jones' leadership. Dr. Marcus Skinner of Selma received similar training during World War I. Dr. Sherrill, Sr. served in field hospitals in the AEF in the vicinity of Paris during World War I.

In November, 1919, Dr. Conwell was made assistant surgeon and later chief of the orthopedic service at Lloyd Noland Hospital. He remained there until 1936. The first edition of *Fractures, Sprains and Other Orthopedic Injuries*, by J. Albert Key and H. Earle Conwell appeared in 1934. Subsequent editions of this outstanding text in 1937, 1942, 1946, 1951, 1956, and 1961 raised the sale to 50,000 volumes. Dr. Conwell was a founding member of the American Academy of Orthopedic

Surgery in 1933 and a pioneer member of the American Orthopedic Association since 1936. Dr. Conwell constantly stated that fracture treatment was a field for orthopedic surgery in a day when general surgeons considered fractures their field. Time has proven Dr. Conwell right.

Dr. John Sherrill, Sr. returned from World War I and was for a short time in practice in Hartselle, Alabama and later for a brief time was associated with Dr. Lawrence Scott in Birmingham. Dr. Sherrill became associated with the treatment of crippled children from the very earliest days and has continued to the present time. During these early days establishment of a specialty practice was difficult. Competition was keen. By conservative and well accepted orthopedic measures Dr. Sherrill carved for himself a wonderful reputation and practice in all corners of the State of Alabama.

Dr. Wyatt Roberts received some orthopedic training in England during World War I and again in Boston under Dr. Lovett. Dr. Roberts came to practice in Birmingham about 1922. He worked at the Baptist Hospital and the old Hillman Hospital. He retired from the active practice of orthopedic surgery because of physical disability and entered the field of ear, nose, and throat about 1940 and is still practicing. There has been mention of a Dr. Farnsworth in practice in Birmingham in orthopedic surgery for about three to four years during the period from 1922-1926.

Dr. William C. Hannon, born in 1893, received his training at the New York Orthopedic Hospital and came to Mobile to practice in 1927. That same year he started with the rehabilitation program. He writes interesting tales of early practice in Mobile when no neurosurgeon was immediately available and he was forced to do such emergency work as was required in this field. The author's request for historical information drew an article from Dr. Hannon, which, in itself, is worth publishing as a comparison of orthopedic treatment during his 33 years of practice.

In 1936 and 1937 the State Crippled Children's program was being run by Drs.

Conwell and Sherrill in the northern part of the state and by Dr. Skinner in Central Alabama and Dr. Hannon in South Alabama and South Mississippi. Dr. Hannon was obliged to go over to Mississippi as there were no orthopedic surgeons in that state until 1933 at which time Dr. Thomas Blake came to Jackson, Mississippi. The Crippled Children's Clinic program, as distinguished from the State Crippled Children's program, got off to an equally early start in 1929 on 17th Avenue and 7th Street, South on the fringe of downtown Birmingham. Dr. Lawrence Scott, director, Dr. S. Ralph Terhune and Dr. A. Huey Green were listed as the medical staff of this first clinic. Dr. John D. Sherrill, Sr. succeeded Dr. Scott as director in 1935.

On May 1, 1936, at 11th Avenue and 25th Street in Birmingham, the second clinic building, a 40 bed convalescent home and outpatient clinic was opened. The tremendous effort subsequently made by Mr. Zipp Newman and the *Birmingham News* together with the Monday Morning Quarterback Club and Dr. Sherrill's tremendous personal drive and interest over the period 1936 to 1951 resulted in the opening of the \$1,200,000 Crippled Children's Hospital-Clinic on South 19th Street across from the Jefferson-Hillman Hospital in 1951.

Dr. Lloyd Noland had from the very earliest days established the highest surgical standards of care for casualty patients at the Employees Hospital in Fairfield. He imbued a tremendous stream of residents and interns with this general care of the patient. Among these was Dr. H. Earle Conwell. Following Dr. Conwell's footsteps at Lloyd Noland was Dr. Charles H. Wilson who remained chief of orthopedic surgery until 1940 at which time he elected to complete his training for the American Board of Orthopedic Surgery at Charity Hospital in New Orleans. He went into World War II with the Air Force and remained in service until 1945, coming out as a major. He returned to private practice in Birmingham. In 1960 he became chief of orthopedic surgery at St. Vincent's Hospital and Children's Hospital. Succeeding him at Lloyd Noland Hospital was Dr. Chestley L.

Yelton who received his training at Lloyd Noland Hospital and the Crippled Children's Hospital.

Dr. Paul Shannon was the first orthopedic surgeon in Alabama to receive a completely uninterrupted three years of formal orthopedic training in Boston and came into practice in Birmingham in the lean year of 1936 to build his practice at the Baptist Hospital. He gave liberally of teaching time to the old Hillman Hospital and to the new medical school and Crippled Children's Hospital-Clinic. His long time partner, S. Ralph Terhune, after receiving initial training at the Employees Hospital, Fairfield, Alabama, began practicing in 1933 in Birmingham. He continued to devote his time to the specialty of orthopedic surgery until he was called to the armed services in World War II. He was commissioned as a First Lieutenant and rapidly rose to full Colonel. As the chief of several large orthopedic services he was a stimulating inspiration to young aspiring orthopedic surgeons including the author. Dr. Terhune completed his formal children's orthopedic requirement at the famous Kerran's Hospital in Baltimore in 1945-46 and then came back to Birmingham to practice in 1947. Through the years his pleasant, easy going disposition and ready wit have endeared him to all members of the profession.

Dr. Ben Meyer finished an orthopedic residency at the old Hillman Hospital in 1944, after taking preliminary training at Mount Sinai Hospital in Chicago. He joined Dr. Sherrill, Sr. in practice in 1944 and continued until 1949. After a short year in Hollywood, California, he was named to the orthopedic staff of Carraway Hospital. His outstanding work in rehabilitation continues to this day.

The second great turning point in orthopedic surgery in Alabama was the re-establishment of a four year medical school in 1945 in Birmingham. Dr. John D. Sherrill, Sr. was named the first chief of the Department of Orthopedic Surgery. Dr. Ralph Hobbs was the first resident to complete his training under the new regime. A great number of residents have passed through this complete residency which includes a wealth

of material in fractures and adult reconstructive orthopedics. The outstanding Crippled Children's Clinic-Hospital service has given the widest choice of material and experience to these trainees.

In the period from 1950 to 1960 a great influx of completely trained orthopedic surgeons came to Alabama, a great number from the University of Alabama. The construction of the VA Hospital in Birmingham in 1950 added another strong orthopedic service to be included in the medical school program.

The completion of the Mobile Infirmary and Providence Hospital have added outstanding orthopedic hospital facilities for the growing number of orthopedists in Mobile.

Dr. Elias Kaiser came to practice in Montgomery in 1952 and through his efforts the outstanding facilities at St. Jude Hospital were completed in 1958. The orthopedic dynasty chart in the figure included illustrates the time-geography relationships of orthopedic surgery.

The most royal orthopedic blood available has been transfused and, we hope, not thinned too much. It is easy to see by our state chart the influence of Drs. Robert Jones, Golthwaite, Lovett, Osgood, Willis, Campbell, Smith-Peterson, Lloyd Noland, Guy Caldwell, Albert Key, Hibbs and Albee.

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CLINICAL THERMOGRAPHY

W. F. REYNOLDS, M. D.

The ancient Greek physicians learned by palpation that one part of the body might be warmer or colder than the rest, and, by observation, related this to disease. The fact that one patient was warmer than another was not explored for centuries, until the time of Sanctorius of Padua, circa 1625, who measured body temperature in certain fevers. To the modern practitioner, accustomed on his hospital rounds to a graphic chart showing temperature measurements at least four times a day, it is surprising to be reminded that routine clinical thermometry, and the clinical thermometer of Sir Thomas Allbutt (1870), are less than one hundred years old.

Clinical interest in localized temperature differences has recently been stimulated by the availability of non-contact thermometers, capable of determining the temperature of objects from a distance by detecting and measuring infra-red radiation emanating from the objects. Photographic means of recording these temperature differences with high accuracy and sensitivity has enhanced greatly the clinical practicality of this type of instrument. Development of the Barnes Thermograph has brought this thermometric technique out of the research laboratory and made it possible for clinicians who are not provided with resident engineers to investigate its possible applications.

At the present time, the ultimate value of the thermogram is as uncertain as the value of the roentgenogram was in 1898. Assessment of a new technique requires both imaginative enthusiasm, and critical scepticism. It is to be desired that the proper balance of these attitudes will decide the fate of this

Editorials

new technique, and that disappointment because it cannot do the impossible will not lead to a lapse of interest, until it is resurrected by another generation. Medical history shows us too many examples of this happening.

The pertinence of the instrument to peripheral vascular disease occurs to the clinician immediately. Dramatic pictorial demonstrations of arterial insufficiency and of acute thrombophlebitis are obtained easily. It is still to be determined whether these are just dramatic pictures, or whether they will contribute significantly to the management of patients and the understanding of the diseases. Thermography of the pregnant abdomen shows placental position. Detection of placenta previa or placental abnormality appears to be an important application. The temperature of an actively growing malignant tumor is higher than the temperature of surrounding normal tissue. Promising results are already at hand in the detection of breast carcinoma and of bone metastases. Investigation is in progress in the study of the inflammatory arthritides. Theoretically, the method might be of value in the diagnosis of the acute surgical abdomen. At the present time, this application is almost completely unexplored.

Through the happy circumstance that Dr. R. Bowling Barnes is a Montgomerian, although he votes in Connecticut, the staff of St. Margaret's Hospital has had the opportunity to use the Thermograph in recent weeks, and will present an exhibit of this work at the meeting of the Association in Montgomery this month. Since the next nearest unit is in Philadelphia, the members of the Association will find it more con-

venient to see the exhibit at the Jefferson Davis Hotel during the Annual Session of the Association later this month.

MISPLACED!

The following letter was received in 1963, but is still appropriate of both the season and the spirit in which it was written.

April 1, 1963

Editorial Department

JOURNAL OF THE MEDICAL ASSOCIATION
OF ALABAMA

Montgomery, Alabama

Gentlemen:

Although this happens to be April Fool's Day, the following item is true, and might be of interest to our membership.

Professor Shari Desai, the General Secretary of the Indian Association of Dermatologists and Venereologists, informed me that, at the annual meeting of that organization held in Calcutta this past January, that I was elected to a LIFE MEMBERSHIP in that organization.

I have been affiliated with the MEDICAL DIGEST of India for many years as Honorary Consulting Editor, and I have contributed articles for that publication.

Recently, I have attempted to get our National Government to back my efforts in attempting to combat the obvious attempts of the Chinese Reds and the Russian Soviets who insidiously try to direct the thinking of other neighboring nations by infiltrating these medical journals with their propaganda. I believe it is high time that we American physicians try to help India and other nations with our medical knowhow as well as our money.

The above action, taken by this important medical body in India, seems to bear out the fact that our efforts might not have been in vain. I only wish other medical colleagues will join in this highly important work to help our medical confreres who happen to be faced with Communistic propaganda.

With kind personal regards,

Sincerely yours,
Wallace Marshall, M. D.

A RESOLUTION

WHEREAS, Polio, one of the most dreaded diseases for a long period of time, has now, with the discovery of the Sabin Oral Polio Vaccine, been considerably mastered and overcome; and

WHEREAS, the Montgomery Medical Society has secured a supply of the Sabin Oral Polio Vaccine, and arranged time and places for this vaccine to be administered in its three separate doses; and

WHEREAS, the people of our community have volunteered as workers to assist in the administration of the said vaccine:

NOW, THEREFORE, BE IT RESOLVED BY THE BOARD OF COMMISSIONERS OF THE CITY OF MONTGOMERY, ALABAMA, that the thanks of each member of the Board of Commissioners are hereby publicly expressed to the Montgomery Medical Society and its members for the valuable service to our community, and to the multitude of voluntary workers who have assisted in this great fight against polio.

BE IT FURTHER RESOLVED that a copy of this Resolution be spread upon the minutes of this meeting, a copy be sent to the Montgomery Medical Society and a copy be furnished the press.

STATE OF ALABAMA
COUNTY OF MONTGOMERY
CITY OF MONTGOMERY }

I, Silas D. Cater, City Clerk of the City of Montgomery, Alabama DO HEREBY CERTIFY that the foregoing is a true and correct copy of a Resolution which was duly adopted by the Board of Commissioners of the City of Montgomery at a regular meeting adjourned on the 13th day of March, 1964.

GIVEN under my hand and the official SEAL of the City of Montgomery, Alabama this 13th day of March, 1964.

Silas D. Carter,

City Clerk

LEUKEMIA COMMITTEE AMERICAN CANCER SOCIETY

The American Cancer Society Leukemia Committee is planning an all-out public and professional information program on this disease.

Dr. Hugh Gray of Anniston, committee chairman and former president of the Medical Association of the State of Alabama has issued a committee report emphasizing that "leukemia is a form of cancer—cancer of the blood forming tissues"—and the Cancer Society has been, and will continue, to wage a relentless fight against it.

The American Cancer Society currently has in effect research grants directly or indirectly related to leukemia that total more than \$2,000,000, more than that of any other voluntary health agency, Dr. Gray said.

Progress in diagnostic and treatment methods and information pointing to the possibility of cures for the disease will be presented in educational materials to be distributed to physicians and the public, which supports the American Cancer Society's leukemia program, according to Dr. Gray.

The committee's report was released by the ACS, Alabama Division headquarters, 2029 Warrior Road, Birmingham, through Mrs. Lillian G. Meade, division executive director. Information on leukemia may be obtained from this office upon request.

The report disclosed that since the beginning of its major research efforts in 1945, the American Cancer Society has allocated to Alabama research institutions, through its national research program, a total of \$1,393,145 for research, including leukemia. A minimum of twenty-five cents out of each dollar contributed to the American Cancer Society is used for research.

In addition to funds from the national research program, the Alabama Division has made a number of special grants to state institutions. ACS supported scientific studies

of cancer, including leukemia, are now in progress at Southern Research Institute, and the University of Alabama Medical College in Birmingham.

Funds for cancer research, education and service are raised in the ACS crusade held each year during April.

Other members of the American Cancer Society Leukemia Committee are Dr. S. W. Windham, Dothan; Dr. M. Lory Campbell, III, Mobile; Dr. Thomas N. Williams, Montgomery; Dr. Wyatt Simpson, Florence; Dr. William J. Hammack, Birmingham; Dr. J. O. Morgan, Gadsden, president of the ACS, Alabama Division, ex officio; and two lay members, Jex Luce, Mobile, and J. C. Barry, Birmingham.

In the Leukemia Committee report, Dr. Hammack, assistant professor of medicine, University of Alabama Medical Center, said, "We of the American Cancer Society must give greater emphasis to informing the public that leukemia is a major part of the Society's program of patient service as well as research."

As a part of its service program over the state, the Alabama Division of the American Cancer Society provides pain-relieving medicines for leukemia and other cancer patients who are medically indigent, as well as dressings and transportation service.

Dr. Gray said that "many scientists believe that cures will be found for leukemia sooner than for any other cancer. This disease now has become a major cancer problem not only among children but among adults as well. It has increased 17 per cent in adult males and 7 per cent in females in the last ten years. The American Cancer Society is continuing its all-out effort in leukemia research, on which the Society has spent nearly \$12,000,000. In the last 15 years, there has been a marked improvement in the treatment of leukemia patients including prolonging lives for months and even years."

THE PHYSICIAN AND NURSING HOME CARE

By Ruben K. King, Commissioner,

Department of Pensions and Security, State of Alabama

The Alabama physician has a key role in the whole area of nursing home care in this State. It is he who recommends such care, and often gives medical supervision during the period of residential care.

A high proportion of the persons now in Alabama's licensed nursing homes are public assistance recipients. An important service of the Department of Pensions and Security is participation in the cost of such care for individuals eligible for categorical aid, such as old age pensions.

The cost of this care and the number of beneficiaries are increasing sharply. For old age pensioners alone, vendor nursing home payments more than doubled over a two-year period (1961 fiscal year compared with 1963), and the number of persons served monthly rose by more than 1,000. While higher payments and a longer life span are contributing factors to these increases, the Department is concerned as to whether all people in nursing homes actually need institutional nursing service. There is question, too, as to whether some persons in skilled nursing homes could be cared for in other licensed nursing homes which have lower rates.

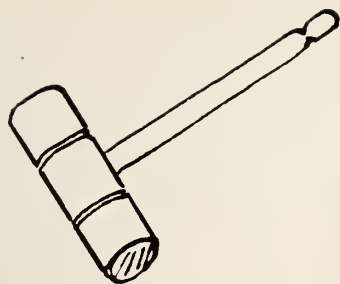
Suitable arrangements often can be made for care in a private home, either the recipient's or another, or in a licensed personal care home. The latter are a relatively new resource in this State and represent a type of service between one's own home and a nursing care facility. Now that State legislation of 1962 is in effect and licensure is a

responsibility of the State Health Department, assistance recipients in personal care homes can be paid a specified amount (within limits) to cover the cost to the home. Maximums for such payments are less than those for vendor payments for nursing home care, since fewer services are required and rates are lower.

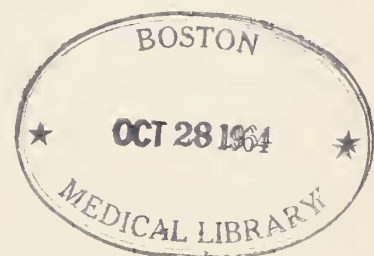
In the light of the considerations cited above, the Department of Pensions and Security has amended its rules governing nursing home care to provide that the agency will not pay any of the cost of care of a recipient going into a licensed home unless the county department participated in the plan "except where there is an emergent situation and the physician recommends nursing care immediately."

This amended provision gives further emphasis to an existing requirement that other resources be explored fully first. The person whose needs are served better by a personal care home or in another setting will not be referred for nursing home care. Benefits will accrue to the recipient, to the taxpayer, and to those who need and might otherwise be denied nursing care for lack of funds or facilities.

As a physician, therefore, you are urged to recommend nursing home care only when other means of care are not feasible and institutional nursing care is essential for the particular recipient's condition. Your cooperation will enable us to strengthen this whole area of agency service.



President's Page



Fifty years ago if a fellow got the urge to become a doctor of medicine he had to finish a high school, at least one year of pre-medical training in some university or college, and then four years in an A grade medical college. Having successfully done all this he was given an M. D. degree.

This degree made him eligible either to enter a hospital for more training or take some State Board examination and obtain a license to go out and begin a practice. Back then most of the fellows went into a rotating internship for another year or so. A few sought locations and began to see patients—if and when. This was perhaps taking undue advantage of the sick and injured, for of course, one's clinical armamentation was limited. Nevertheless, during those days, and perhaps yet, there was no better school than that of experience, which if correctly used always added to one's storehouse of knowledge and increased the dexterity of one's skills.

In those days the teachers in the last two years of medicine were men who were doing private practice downtown in the city where the medical school was located. This gave students valuable and practical information about all facets of a doctor's life as lived

then. One of our teachers told us that the certificate of graduation from medical college did not mean we were masters in the arts and skills of medicine, it was only an authorization to go out and learn about medicine from the patients we might be called on to treat.

There have been endless scientific, economic, and educational changes in the scope of medical affairs during the last four decades, more than ever before since the beginning of time. Diseases that were killing and common years ago are now completely eradicated or have come under control by new discoveries in drugs or in surgical procedures. Things have so changed until what we once felt was good management in certain conditions has been proven entirely wrong. For instance, sections for difficult obstetrical problems were taboo. Now this is often the safest maneuver in solving such difficulties. At that time, all elderly people were considered bad risks for surgery. Now we know this to be entirely untrue.

During this time the average span of life has been extended to an appreciable degree, thus, bringing problems into health care that were never before encountered.

Although the progress in medical educa-

tion has been rapid, more inclusive, and more time consuming. There are still many unanswered questions arising every day in the average practitioner's activities. The long drawn out slowly ending and often terminal diseases no longer burden the doctor. But, in their places have arisen other pathologies which are challenging all the talents of every physician. This is a day of such rapid change—like from the ox cart to the atomic age in one's life time—until it's no wonder there are new and hard to control human complaints, both in the preventive and curative sections of medicine.

Early in this century doctors had to rely mostly on the limited knowledge about the then known diseases. It was imperative that they made use of all the five senses plus that still very rare sixth sense—common sense or better, maybe, good clinical judgement. Despite the fact of modern day scientific information, technical skills and gadgetry, there is still a great demand for the exercise of this good clinical judgement. All the laboratory procedures with their radiological implementations are giving the profession the answers to many heretofore hidden problems. Yet, if these are used to the exclusion of good common sense perusal of personality changes brought about by the invading pathology, one will accomplish a very big expense account plus only meager curative results for his patient.

It is gratifying to know all these new things are available in diagnosing and treating our patients. These new and modern techniques are made more reassuring because of the number and willingness of the specialty groups who can use them correctly and adequately when necessary in restoring our patients to a happier existence, in a better state of health.

We had only a few hospitals years ago; now there are many public and private hospitals. All these are equipped with nearly anything any emergency might require in its solution. They are so distributed until there is no person in Alabama who could not reach one of these centers of mercy within an hour's time if necessary. These are facts now exist-

ing, yet society is clamoring for more. Sometimes one wonders just where and when the end is, how shall it be reached, and what it will look like when it appears. Inventions are always products arising from the laps of the unyielding demands of mankind.

All those who have had the precious opportunity to have been in the profession 40 years or more have lived and labored through wars and rumors of wars, which always increases the work load along with the pay load. It is at these times everybody always renews his patriotism but loses some of his higher evaluations of humanity. Material things assume a greater importance than spiritual things. Alternating with these historical events have been recessions and depressions which increased the work load with a marked decrease in the pay load. During these years human endeavors are more righteously inclined and a greater degree of brotherhood exists. These facts perhaps compensate for the lack of abundance usually present. These incidents usually result in the decadence and chaos that inhabit the involved countries for too long without proper and adequate resolution.

When a person begins to reminisce it identifies him as one in the elderly group and may also indicate the end of his usefulness.

The one satisfying fact about my being so old is that when someone starts restating occurrences back when—I can know whether he is telling the truth or not—for I was there. So, please accept my thanks again for this very great personal and professional honor of being your president this year. My last official command is that when the curtain rolls down on the end of my administration in Montgomery in April, you will be there.



J. G. Daves, M. D.



around the state

NOW HEAR THIS!

MEND PROGRAM

Dr. Maitland Baldwin, director of the National Institute of Neurological Diseases and Blindness, NIH, will visit the Medical Center under the sponsorship of the MEND program and the Alabama Academy of Neurologists and Psychiatrists.

On Saturday, April 18th, he will participate in the Surgical Staff Conference in the Hillman Auditorium as follows:

8:00-9:00 A. M.—“Head Trauma”

9:00-10:00 A. M.—CPC

The Division of Continuing Medical Education of the Medical College of Alabama invites all interested physicians to attend.

MEDICAL ASSISTING— NOT JUST A JOB—A CAREER

One of the privileges of being a member of the American Association of Medical Assistants is being eligible to wear the gold emblem of our National pin. This emblem signifies the ideas for which this association was organized—those of self-improvement, day-by-day personal conduct to encourage a climate of mutual confidence and respect between patient and doctor, and recognition of our professional stature in the field of medicine. The medical assistant who wears this pin reveals the fact that she is an employee who is seeking self-education and is interested in medical assisting as a career. Her philosophy . . . that office personnel, along with doctors, are intensely interested in the welfare of the patient . . . can only result in improved medical care.

AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY

Office of the Executive Secretary:
Robert L. Faulkner, M. D.,
2105 Adelbert Road,
Cleveland 6, Ohio.

The Part II (oral and clinical examination) for all scheduled candidates is being conducted by the entire Board at The Edgewater Beach Hotel, Chicago, Illinois, April 27-May 2, 1964.

Special Notice

As of May 1, 1964, the office of the Secretary-Treasurer of this Board will be located at—

100 Meadow Road
Buffalo 16, New York.

Dr. Clyde L. Randall replaces Dr. Robert L. Faulkner in assuming the duties of this office as of the forthcoming annual meeting of the Board.

New and reopened applications and requests for re-examination in 1965 will be accepted in the Office of the Secretary on or before July 1, 1964 (see above notice for correct mailing address).

Current Bulletins outlining present requirements, and application forms may be obtained by writing to the Office of the Secretary. Applicants are urged to familiarize themselves with the current rules and regulations.

Diplomates of this Board are requested to keep the Board office informed of their current address.



CANDID CAMERA
AT
ALABAMA HEART
ASSOCIATION



MARCH 4 and 5, 1964
GUEST HOUSE MOTEL
BIRMINGHAM, ALABAMA





Alabama Department of Public Health



Physicians Urged To Test All Infants For Phenylketonuria

Harold Klingler, A. B., M. D.

F.I.C.S., F.A.C.S.; Diplomat, American Board of Obstetrics and
Gynecology; Director, Bureau of Maternal and Child Health,
Alabama Department of Public Health

Phenylketonuria is an hereditary disease resulting in mental retardation. However, unlike many hereditary diseases, phenylketonuria is preventable. A program of prevention of this disease was begun in Alabama three years ago by the Bureau of Maternal and Child Health. The Program emphasizes the importance of regular testing of infants during the first few months of life to determine the presence of phenylpyruvic acid in the urine. A kit containing reagents and instructions on testing infants has been made available to all county health departments. In many Alabama counties every baby examined in our Well-Baby Clinics since April 1961, has been tested.

The disease is a relatively new addition to our list of clinical entities. In 1934 Dr. Folling discovered the condition by observing phenylpyruvic acid in the urinary excretions of ten mentally retarded children. Phenylketonuria seems to appear in one infant out of twenty thousand so it is not one of the so-called common diseases. All races are

susceptible, but the incidence is somewhat greater in persons of European extraction. Negroes and Jews have a reduced rate of incidence. It is believed that about five to eight new cases of phenylketonuria occur in Alabama each year.

The causative factor of this disease entity is an absence or deficiency of the enzyme which involves the hydroxylation of phenylalanine into tyrosine. The apparent gradual increase, or build up, of phenylalanine in the blood stream reaches a concentration where it becomes toxic. The toxic material apparently acts over a period of weeks or months, and gradually produces sufficient destruction of brain cells to produce a mentally retarded condition. There is a familial tendency toward this condition, and it is apparently carried by a recessive gene.

The only acceptable method of dealing with phenylketonuria is prevention, which, in turn, is dependent upon early diagnosis. The diagnosis is based upon the detection of phenylpyruvic acid in the urine and increased

phenylalanine in the blood. During the first week of the infant's life phenylpyruvic acid does not accumulate in sufficient concentration to be discovered in the urine. However, between the third and fourth weeks this abnormal material begins to be excreted in sufficient quantities to produce a positive ferric chloride test. When such cases are found, definitive diagnosis should be made by phenylalanine concentration determinations in the blood.

The prevention of mental retardation accompanying this situation depends upon a proper diet. Dietary restrictions and substitutions can prevent the condition if it is discovered before irreparable brain damage occurs. The dietary regime consists of limiting the amount of phenylalanine, the substance toxic and destructive to central nervous system cells, in the blood stream. There is no substitution therapy at this time to replace the missing enzyme, phenylalanine hydroxylase, which is the essential enzyme effective in the metabolism of phenylalanine. The phenylalanine content in the diet is not completely eliminated as a small amount of this substance is necessary for the normal development of the infant.

The dietary treatment consists of using foods to substitute for milk and other proteins that contain phenylalanine. Drug houses have developed milk substitutes which contain very little phenylalanine. Most fruits, vegetables, and cereals are low in phenylalanine and may be used in the diet.

There are several methods used in testing for phenylpyruvic acid in the urine. The ferric chloride test consists of the use of a drop of 10 per cent solution of ferric chloride placed on a recently soiled, wet diaper. In the presence of phenylketonuria this test produces a green spot which appears almost instantly but soon fades.

Dr. Guthrie of Buffalo has found the incidence of phenylketonuria to be considerably higher by using a blood examination technique. The bacillus growth inhibition method which he uses appears to be very effective in detecting the condition at an earlier age.

Urine examinations do not usually reveal significant amounts of phenylpyruvic acid until the infant is about two weeks of age.

The Bureau of Maternal and Child Health suggests that ferric chloride tests be made at the several visits to our Well-Baby Clinics. In a few cases the urine test will be negative from time to time, but the condition may be discovered if the test is repeated. The blood test is not being used by county health departments to discover this condition at this time. Most of the indigent group given care by public health clinics are delivered in the home by midwives. For technical reasons the blood test is therefore impossible. All children under three years of age should be tested for phenylketonuria on several occasions.

The prognosis of phenylketonuria is dependent upon the period when a diagnosis is made and upon how early therapy is commenced. Cases discovered and treated during the first few months of life have a possibility of being mentally normal. In older children where brain damage has already been established, the condition is irreversible. However, some improvement in behavior may be observed following therapy. It appears at present that children who have phenylketonuria should remain on a diet low in phenylalanine for several years. Subsequently a regular diet may be established as brain damage does not occur after the child has reached a certain age.

It is estimated that the cost of institutional care for a mentally retarded person having this condition reaches the vicinity of \$150,000. From an economic standpoint alone it is worthwhile to prevent phenylketonuria in order to save large amounts of public money.

Phenylketonuria is a type of mental retardation for which we know the cause, we have the treatment, and we have the possibility of obtaining good results. Health departments offer consultation and advice regarding therapy through Maternal and Child Health clinics. New cases will be given special attention and consultation by the Nutritionist in the Bureau of Maternal and Child Health.

DEPARTMENT OF HEALTH

BUREAU OF LABORATORIES

Thomas S. Hosty, Ph.D., Director

February 1964

Examinations for intestinal parasites	1,273
Typhoid cultures (feces, urine and other)	184
Brucella cultures	0
Examinations for malaria	4
Examinations for gonococci	1,645
Serologic tests for syphilis (blood and spinal fluid)	22,993
Darkfield examinations	6
Agglutination tests	4
Examinations for diphtheria bacilli and Vincent's	53
Complement fixation tests	15
Examinations for Negri bodies (smears and animal inoculations)	186
Water examinations	2,285
Milk and dairy products examinations	4,290
Examinations for tubercle bacilli	3,651
Miscellaneous examinations	4,342
Total	40,931



BUREAU OF PREVENTABLE DISEASES

W. H. Y. Smith, M. D., Director

CURRENT MORBIDITY STATISTICS

1964

*E. E.

	Jan.	Feb.	Feb.
Tuberculosis	78	133	142
Syphilis	136	112	124
Gonorrhea	333	316	293
Chancroid	3	3	3
Typhoid fever	0	1	1
Undulant fever	0	1	0
Amebic dysentery	1	2	2
Scarlet fever and strep. throat	169	137	129
Diphtheria	0	0	2
Whooping cough	6	4	12
Meningitis	4	6	12
Tularemia	2	1	0
Tetanus	2	1	1
Poliomyelitis	0	0	0
Encephalitis	0	0	0
Smallpox	0	0	0
Measles	96	116	314
Chickenpox	104	111	191
Mumps	127	80	148
Infectious hepatitis	35	34	56
Typhus fever	0	0	0
Malaria	0	0	0
Cancer	385	999	597
Pellagra	0	0	0
Rheumatic fever	12	17	13
Rheumatic heart	41	51	29
Influenza	198	280	2,778
Pneumonia	312	333	326
Rabies—Human cases	0	0	0
Pos. animal heads	3	0	0

As reported by physicians and including deaths not reported as cases.

*E. E.—The estimated expectancy represents the median incidence of the past nine years.

BUREAU OF VITAL STATISTICS

Ralph W. Roberts, M. S., Director

PROVISIONAL BIRTH AND DEATH STATISTICS AND COMPARATIVE DATA, DECEMBER 1963

Live Births Deaths Causes of Death	Number Registered During December 1963			Rates* (Annual Basis)		
	Total	White	Non-White	1963	1962	1961
Live Births	6,282	3,969	2,313	21.9	23.6	24.3
Deaths	2,875	1,850	1,025	10.0	9.7	10.3
Fetal Deaths	107	52	55	16.7	19.2	18.8
Infant Deaths—						
under one month	114	59	55	18.1	21.0	22.0
under one year	206	95	111	32.8	36.0	36.8
Maternal Deaths	4	1	3	6.3	2.9	10.1
Causes of Death						
Tuberculosis, 001-019	16	9	7	5.6	8.5	12.1
Syphilis, 020-029	3	2	1	1.0	1.4	1.4
Dysentery, 045-048					0.4	
Diphtheria, 055					0.4	
Whooping cough, 056						0.7
Meningococcal infections, 057	1	1		0.3	0.7	1.1
Poliomyelitis, 080, 081					0.4	
Measles, 085						0.7
Malignant neoplasms, 140-205	330	243	87	115.2	123.4	124.7
Diabetes mellitus, 260	37	23	14	12.9	13.4	15.0
Pellagra, 281						
Vascular lesions of central nervous system, 330-334	330	233	157	135.2	130.8	137.5
Rheumatic fever, 400-402	2		2	0.7	0.4	1.1
Diseases of the heart, 410-443	977	691	286	341.2	322.7	364.4
Hypertension with heart disease, 440-443	211	99	112	73.7	53.2	59.8
Diseases of the arteries, 450-456	60	38	22	21.0	20.4	28.1
Influenza, 480-483	8	5	3	2.8	2.5	3.6
Pneumonia, all forms, 490-493	129	64	65	45.0	34.9	28.1
Bronchitis, 500-502	8	8		2.8	1.4	3.2
Appendicitis, 550-553	2	1	1	0.7	1.8	0.7
Intestinal obstruction and hernia, 560, 561, 570	13	8	5	4.5	3.2	5.3
Gastro-enteritis and colitis, under 2, 571, 0, 764	9	3	6	3.1	3.9	3.6
Cirrhosis of liver, 581	16	12	4	5.6	6.0	5.3
Diseases of pregnancy and childbirth, 640-689	4	1	3	6.3	2.9	10.1
Congenital malformations, 750-759	46	36	10	7.3	5.1	4.5
Immaturity at birth, 774-776	27	10	17	4.3	6.1	6.6
Accidents, total, 800-962	252	167	85	88.0	76.2	69.8
Motor vehicle accidents, 810-835, 960	132	103	29	46.1	29.6	30.6
All other defined causes	390	244	146	136.2	133.7	147.8
Ill-defined and unknown causes, 780-793, 795	155	51	104	54.1	59.6	48.8

*Rates: Birth and death—per 1,000 population

Infant deaths—per 1,000 live births

Fetal deaths—per 1,000 deliveries

Maternal deaths—per 10,000 deliveries

Deaths from specified causes—per 100,000 population

BUREAU OF VITAL STATISTICS
 Ralph W. Roberts, M. S., Director
PROVISIONAL BIRTH AND DEATH
STATISTICS FOR 1963 AND COMPARATIVE
DATA

Live Births Deaths Causes of Death	Number Recorded			Rates*		
	1963 Prov.	1962 Final	1957-1961 Average	Prov. 1963	Final 1962	Average 1957-1961
Live Births ...	75,202	78,060	81,568	22.3	23.4	25.1
Deaths ...	31,638	30,577	29,149	9.4	9.2	9.0
Fetal Deaths ...	1,550	1,586	1,756	20.2	19.9	21.1
Infant Deaths—						
under one month ...	1,602	1,613	1,764	21.3	20.7	21.6
under one year ...	2,404	2,404	2,653	32.0	30.8	32.5
Maternal Deaths ...	58	49	66	7.6	6.2	7.9
Causes of Death						
Tuberculosis, 001-019	264	272	307	7.8	8.1	9.4
Syphilis, 020-029	43	45	65	1.3	1.3	2.0
Dysentery, 045-048	7	16	14	0.2	0.5	0.4
Diphtheria, 055	4	2	5	0.1	0.1	0.2
Whooping cough, 056	2	2	8	0.1	0.1	0.2
Meningococcal infections, 057	14	11	20	0.4	0.3	0.6
Poliomyelitis, 080, 081	6	5	6	0.2	0.1	0.2
Measles, 085	4	11	13	0.1	0.3	0.4
Malignant neoplasms,						
140-205	3,978	4,037	3,700	118.0	120.9	113.8
Diabetes mellitus, 260	451	422	417	13.4	12.6	12.8
Pellagra, 281	4	6	10	0.1	0.2	0.3
Vascular lesions of central nervous system, 330-334	4,382	4,263	4,047	130.0	127.7	124.5
Rheumatic fever, 400-402	21	18	30	0.6	0.5	0.9
Diseases of the heart, 410-443	10,459	10,372	9,646	310.2	310.7	296.7
Hypertension with heart disease, 440-443	1,556	1,669	1,781	46.1	50.0	54.8
Diseases of the arteries, 450-456	671	723	661	19.9	21.7	20.3
Influenza, 480-483	272	130	221	8.1	3.9	6.8
Pneumonia, all forms, 490-493	1,149	833	866	34.1	24.9	26.6
Bronchitis, 500-502	66	60	63	2.0	1.8	1.9
Appendicitis, 550-553	37	32	33	1.1	1.0	1.0
Intestinal obstruction and hernia, 560, 561, 570	149	166	141	4.4	5.0	4.3
Gastro-enteritis and colitis, under 2, 571, 0, 764	108	134	140	3.2	4.0	4.3
Cirrhosis of liver, 581	207	195	190	6.1	5.8	5.8
Diseases of pregnancy and childbirth, 640-689	58	49	66	7.6	6.2	7.9
Congenital malformations, 750-759	372	386	394	4.9	4.9	4.8
Immaturity at birth, 774-776	482	501	592	6.4	6.4	7.3
Accidents, total, 800-962	2,230	2,089	1,991	66.1	62.6	61.2
Motor vehicle accidents, 810-835, 960	1,043	957	920	30.9	28.7	28.3
All other defined causes	4,488	4,471	4,355	133.1	133.9	106.9
Ill-defined and unknown causes, 780-793, 795	1,710	1,326	1,148	50.7	39.7	35.3

*Rates: Birth and death—per 1,000 population
 Infant deaths—per 1,000 live births
 Fetal deaths—per 1,000 deliveries
 Maternal deaths—per 10,000 deliveries
 Deaths from specified causes—per 100,000 population

3 IMPORTANT FACTS

ABOUT AMERICAN CANCER SOCIETY RESEARCH

1.
 National Research
 Expenditures, Fiscal 1962-63
\$12,456,745

2.
 Total of Grants in Effect, Directly or Indirectly Related to
Leukemia Research . . .
More Than \$2,000,000
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OBITUARIES

SEARCY—Dr. Harvey Brown Searcy, member of a pioneer Tuscaloosa family, and one of Tuscaloosa's oldest practicing physicians died on February 28. He was 79. Dr. Searcy was in his 57th year of practice.

He was the third in a direct line and the fifth Dr. Searcy to practice in Tuscaloosa during a period that spans 131 years of the City of Tuscaloosa's history.

Dr. Searcy was active in sight conservation work and was awarded the Community Service Award of the Alabama Sight Conservation Association in 1952 by the Alabama Lions Clubs. He was one of ten men who organized the original Druid City Hospital. He was one of the chief organizers of the Druid City Hospital on the University campus, and helped plan and promote the present Druid City Hospital.

Dr. Searcy was the author of "We Used What We Had," a book which described his early life and medical practice. During his medical career he invented 26 medical instruments.

He was educated at the old Verner Military School and Stafford School, and was graduated from the University of Alabama at the age of 18.

Following graduation from the University of Michigan in 1907, he began his medical practice. After a year in Birmingham and two years in Memphis, Tennessee, he returned to Tuscaloosa. Dr. Searcy served his internship at Bryce Hospital and then went

to Birmingham to practice with Dr. S. L. Ledbetter, eye, ear, nose and throat specialist.

During World War I, he served overseas in Vichy, France. He also studied at Sorbonne University in Paris, receiving training in eye surgery and plastic facial surgery. He was discharged after the war with the rank of major and returned to his office in Tuscaloosa in 1919.

Professionally he had served as president of the Medical Association of the State of Alabama, an honor accorded to his father and grandfather. He served as the first president of the Alabama Chapter of the American College of Surgeons, and as president of the eye, ear, nose and throat section of the Southern Medical Association—the first Alabamian to head this 16-state organization.

Dr. Searcy also had served as president of the Tuscaloosa County Medical Society, and as secretary of the Board of Trustees of the Alabama State Hospitals.

Dr. Searcy is survived by his wife, Mrs. Mary Emily Fitts Searcy; two daughters, Mrs. Robert Yoder and Mrs. Clayton Rogers of Demopolis; six grandchildren, Robert Yoder, Harry Yoder, James Yoder, Steve Rogers, Mary Emily Rogers, and Cynthia Rogers, all of Demopolis; a brother, Peter Searcy of Austin, Texas; a sister, Mrs. J. Brown Farrior of Tampa, Florida; 17 nieces and nephews, and a number of great-nieces and great-nephews.

Dr. Harvey B. Searcy will be long remembered for his contributions to medical science.

COWLES—Dr. Thomas DeWitt Cowles, a general practitioner and surgeon in Troy, Alabama, died on March 20, 1964 at the age of 72.

Dr. Cowles was a graduate of the University of Alabama Medical School. He interned at Providence Infirmary.

Dr. Cowles served as a 1st Lieutenant in World War I.

He was a member of the Pike County Medical Society, the Medical Association of the State of Alabama, and the American Medical Association. He was a member of the Beard Hospital staff in Troy, Alabama.

Dr. Cowles is survived by his wife, Mrs. Fannie L. Cowles; a son, Thomas DeWitt Cowles, Jr.; and five grandchildren.

DURRETT—Dr. J. H. Durrett, a retired naval medical officer, died on February 14, 1964 at the University Hospital in Birmingham.

Dr. Durrett, a native of Tuscaloosa, graduated from the University of Alabama Medical College in Mobile in 1910. Following graduation, he practiced medicine at Century, Florida before entering the U. S. Navy during World War I.

He retired from the Navy as a commander and was recalled to active duty during World War II. He served on recruiting duty in Birmingham as a medical officer.

Dr. Durrett was a member of the Tuscaloosa County Medical Society, the Medical Association of the State of Alabama, and the American Medical Association.

He is survived by his wife, Mrs. J. H. Durrett; three sisters, Mrs. Frank Daniel and Mrs. Henry T. Burks, Sr., of Tuscaloosa, and Mrs. Marbury Rainer of Birmingham; a brother, Dr. J. J. Durrett of Winter Park, Florida; and several nieces and nephews.

FAUST—Dr. Daniel Bascom Faust, 74, a retired colonel with the United States Army Medical Corps, died at Maxwell Air Force Base on March 25.

Dr. Faust, a gastroenterologist and author

of two diet manuals for the Army, had been living in Montgomery, Alabama since his retirement from the service in 1946. He was a native of Dale County.

Dr. Faust was educated at Baptist Collegiate Institute and was graduated from the University of Alabama Medical School in 1913. He entered the Army in 1917 and was stationed in many parts of the world during his military career. He was commanding officer of general hospitals in Ft. Jackson, South Carolina and Rome, Georgia.

Dr. Faust was a member of the Medical Society of Montgomery County, the Medical Association of the State of Alabama, and the American Medical Association.

Dr. Faust is survived by his wife, Mrs. Irma C. Faust, Montgomery; one brother, Louie Faust, Ozark; four sisters, Mrs. Louise Adams, Montgomery, Mrs. William George Hall, Tuscaloosa; Mrs. William Ragsdale and Miss Laura Faust, Ozark.

GOODE—Dr. J. Henry Goode, a surgeon of Tuscaloosa, Alabama, died on March 9, 1964 at the age of 63.

Dr. Goode, a native of Rogersville, had been a practicing surgeon in Tuscaloosa for 33 years.

He received his premedical training at the University of Alabama, and his medical degree from Tulane University. He interned at St. Margaret's Hospital in Montgomery. He had been a member of the staff of Druid City Hospital since January, 1927.

Dr. Goode was a member and past president of the Tuscaloosa County Medical Society, a member of the Medical Association of the State of Alabama, the Southern Medical Association, and the American Medical Association. He was named a fellow and a diplomate of the International College of Surgeons in 1954, and a fellow of the Southeastern Surgical Congress in 1955.

He had served as a committee member of the University of Alabama Development Board and was a member of the University of Alabama and Tulane University Alumni

Councils. He was a past president of the University of Alabama School of Medicine Alumni Association.

During World War II he worked with the Selective Service.

Dr. Goode is survived by his wife, Mrs. J. Henry Goode; a daughter, Mrs. James Cowden; two grandchildren, Beth and Martha Cowden, all of Tuscaloosa; two brothers, and two sisters.

ISELL—Dr. Arthur L. Isbell, a general practitioner in Albertville, Alabama, died on January 23, 1964 of a myocardial infarction. Dr. Isbell was 80 years of age.

Dr. Isbell was graduated from the Medical College of Alabama in 1912. He was a member of the Fifty Year Club and a Life Counsellor of the Medical Association of the State of Alabama; a member of the Southern Medical Association, American Medical Association, American College of Physicians and Surgeons, Academy of Geriatrics, Alabama Diabetes Association; and a charter member of the American Academy of General Practice. He served on the DeKalb County Board of Health for ten years and on the Marshall County Board of Health for 38 years. Dr. Isbell was a member of the State and County Tuberculosis Association and was affiliated with the Boaz-Albertville Hospital Staff.

A pioneer physician of the Sand Mountain area, Dr. Isbell delivered over 7,000 babies.

Dr. Isbell is survived by his wife, Mrs. Cora Harris Isbell; five daughters, Mrs. Ed Roberts, Mrs. Dorsett Davis, Mrs. Winston Walker, Jr., all of Albertville, Mrs. M. Howard Duke, Gadsden, Mrs. S. L. Rainey, Wurzburg, Germany; four sons, Dee Isbell, Neil Isbell, and Quinton Isbell of Albertville, and Dr. E. A. Isbell of Gadsden; fifteen grandchildren and five great grandchildren.

McINTOSH—Dr. Edward Leroy McIntosh, a county health officer for 30 years, died in Camden, Alabama on March 14, 1964.

Dr. McIntosh was a member of an early Wilcox County family of Scottish descent.

He practiced medicine both in Camden and Catherine.

He was graduated from medical school in Atlanta in 1902.

Dr. McIntosh was a member of the Wilcox County Medical Society, the Medical Association of the State of Alabama, and the American Medical Association.

He is survived by his wife, Mrs. Grace Robins Pharr McIntosh; two sons, Edward Leroy McIntosh, Jr., Camden, and Robins Pharr McIntosh, Gainesville, Florida; and three grandchildren.

RYAN—Dr. John Morgan Ryan, a general practitioner and obstetrician in Helena, Alabama died on January 6, 1964 at the age of 73.

Dr. Ryan was a graduate of the University of Alabama School of Medicine. He served his internship at the Jefferson Hillman Hospital in Birmingham, and his residency at Charity Hospital, New Orleans, Louisiana. He served in the Medical Division Corps of the Army Engineers during World War I. Dr. Ryan was given the Selective Service System Medal in World War II.

He was a member of the Shelby County Medical Society, the Medical Association of the State of Alabama, the Southern Medical Association, the American Academy of General Practice, and the American Medical Association.

A member of the hospital staff of the South Highland Hospital and Shelby Memorial Hospital, Dr. Ryan had practiced medicine for 49 years in Shelby County.

The happiest moments of Dr. Ryan's life were spent when he knew that Shelby Memorial Hospital was being built, equipped and staffed. He believed that Shelby Memorial Hospital made a better life for Shelby County patients and doctors.

Dr. Ryan is survived by his wife, Mrs. John Morgan Ryan; two daughters, Mrs. Charles L. Jones and Mrs. Betty R. Kidd, both of Birmingham; three sons, John Morgan Ryan, Jr. of Westminster, California, James W. Ryan, and Patrick Joseph Ryan of Birmingham, Alabama.

The Woman's Auxiliary

Dear Doctors:

Try to visualize a map of Alabama with two counties simply shining. They are LIMESTONE and LAMAR where medical Auxiliaries have just recently been organized. This really will help the looks of our state membership map. And in a more practical vein, it will help the medical societies in these counties, this being the reason for our existence.

President-elect, Frances Clemmons, and I were both in Athens to help the Limestone girls organize, but Lamar managed the big step all by themselves. Blount County was sporting a very slushy three inches of snow early in the morning with no let-up of snow-fall in sight. My trip was limited to ten very slow miles before I turned back. Had a little private discussion with that "someone up there" who sent the snow, in the car on the way back, to explain that I was leaving it up to Him to get them organized, and it worked beautifully.

Besides urging these two groups to write letters to Congressmen, we suggest the celebration of Doctor's Day as a fine function to start their program.

Convention plans are ever present in our schedule. Did you know that husbands are cordially invited to the Auxiliary luncheon on Thursday, April 23, 1964, at the Montgomery Country Club? We really have an ulterior motive which we may need to air right now. There will be a fashion show and we want you to see these lovely things and visualize us in them. Much better than trying to tell you about them later.

And so we come to almost the end of the year, this being my last page to you. It has been a year in which I, a native Minnesotan, have learned much about the geography of Alabama. Last year as membership chairman I learned about county names because of the make-up of our state yearbook which lists Auxiliaries by counties, forcing one to think "Decatur is in Morgan County, look under the Ms." This year I have learned personally



about many of these counties, from Florala to Gadsden and Jacksonville, from Auburn and Opelika to Vernon, Florence and Mobile. Of course the center of this star is the State Office in Montgomery, to the personnel of which we extend thanks for so many requests answered throughout the year, things like "a hundred copies of WRITE YOUR CONGRESSMAN AND SENATORS in the next mail, please," and there they were.

Alabama is truly a place of great natural beauty whose scenes have unfolded through the year, some familiar, some as new as yesterday's view of the spectacular river crossing between Scottsboro and Ft. Payne, on a road I had never happened to go over before. It is most interesting to see each Auxiliary in its own locale, and so rewarding to find groups working hard on our projects such as sponsoring a Health Careers Club, raising a surprisingly large amount of money for a scholarship, actively fighting King-Anderson, eager to hear the difference between this bill and Kerr-Mills.

And so we round out a year of meeting the fifth of the month deadline for this publication. The Bard said that parting is such sweet sorrow and indeed it is. Writing this piece has fulfilled part of our SERVE AND COMMUNICATE theme for the year. We pass the torch to Frances Clemmons, the torch of love and appreciation the Auxiliary carries for MASA.

Faithfully yours,

Marlys R. Sutton

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In Clinical Practice:

ELECTROLYTES, WATER AND ACID-BASE PROBLEMS

J. J. Kirschenfeld, M. D., F.A.C.P.

INTRODUCTION

The conscious, alert patient with intact renal and respiratory function rarely has difficulty in regards to maintaining the isotonicity and the volume of the extracellular fluids. Any derangement in intake or output of fluids or electrolytes is immediately restored by the built-in homeostatic controls operating in the kidney and the lung aided by the individual's thirst mechanism. On the other hand, the following clinical situations may lead to trouble:

1. Chronic involvement of the kidneys or lungs
2. The unconscious patient

3. The individual, especially the infant, who is vomiting severely or losing excessive secretions through the bowel

4. Surgical cases of abnormal fluid loss

Depletion of either electrolytes or water or acid-base changes may then occur.

CLINICAL SITUATIONS WHERE DISTURBANCES MAY OCCUR

1. Severe gastrointestinal losses
 - a. Vomiting—excessive losses of chloride and water primarily, but also sodium and potassium
 - b. Diarrhea—excessive losses of potassium, salt and water
 - c. Other gastrointestinal losses through suction or fistulas—the specific deficiency depending on the type of solution being lost

Dr. Kirschenfeld is an Internist in Montgomery, Alabama and Clinical Assistant Professor of Medicine of the University of Alabama Medical College.

2. Excessive losses through the skin—this may occur with abnormal sweating in very hot and humid environment, especially in those not acclimatized, i.e., "heat stroke," "heat exhaustion," etc. The patient with mucoviscidosis is especially vulnerable.

3. Excessive pulmonary losses—this situation may arise in chronic lung disease by virtue of hypoventilation with accumulation of carbon dioxide or hyperventilation with excessive loss of carbon dioxide; the result is disturbance in acid-base balance.

4. Excessive renal losses or retention—these situations can occur in various chronic renal diseases to be discussed further.

5. Cardiac failure or ascites (especially cirrhosis)—in these situations there is abnormal accumulation of salt and water; the extensive use of diuretics and salt-poor diets may result in electrolyte and water problems.

6. Hormonal abnormalities—electrolyte problems occur frequently as result of disturbance in pituitary, adrenal, thyroid or sex glandular function.

7. Central nervous system abnormalities—this is a rare type of situation where hypophyseal or post-pituitary involvement may cause abnormal fluid excretion or retention.

8. Iatrogenic

a. Situations of abnormal thirst due to central nervous system involvement or psychosis (compulsive water drinkers).

b. Diminished intake of fluids during illness or surgery or excessive administration of fluid and electrolytes to an unconscious patient by the physician.

CLINICAL SIGNS OF WATER, ELECTROLYTE OR ACID-BASE ABNORMALITIES

In actual practice pure water or pure salt are never lost through any source; the loss consists of some type of plasma solution. The closest approximation to pure water loss would be in increased insensible loss (high fevers), forced, massive water diuresis resulting in a very hypotonic urine or in dia-

betes insipidus. Water intoxication (retention) is similarly quite rare because the kidneys will usually excrete excessive water intake provided that plasma solution losses are not being rapidly replaced by intravenous dextrose in water or by tap water enemas. Water dilution of extracellular fluid may also occur in situations of inappropriate anti-diuretic hormone action; however, this is rare. The usual clinical situation is that of combined salt and water depletion (dehydration) since a plasma solution of various concentration of salt and water is usually lost.

I. Clinical Signs of Sodium and Water Depletion are as follows:

a. Loss of skin elasticity—best determined in areas where the skin is not thickened, i.e., dorsum of the hand, upper arms, chest, etc.

b. Shriveling of the tongue—the best indicator

c. Soft and recessed eyeballs

d. Circulatory changes—drop in blood pressure and increase in pulse rate due to decrease in blood volume. Concurrent decrease in urine volume, salt content, and increased specific gravity

e. Central nervous system symptoms such as agitation, restlessness or somnolence.

II. Clinical Signs of Excessive Sodium and Water Accumulation—may be due to intravenous saline loading, congestive cardiac failure, or hyperaldosteronism. Manifested by edema, pulmonary congestion and central nervous system disturbance.

III. Clinical Signs of Water Intoxication (Rare)—polyuria, restlessness, diarrhea, salivation, vomiting, and convulsions.

IV. Clinical Signs of Potassium Depletion (Hypokalemia)—can occur with,

a. Severe lack of food intake or excessive loss of fluid from the gastrointestinal tract (diarrhea) or the genito-urinary tract.

b. Excessive glucose administration, especially with insulin, may result in a shift

of potassium from the extracellular to the intracellular space.

c. Diuretics used in chronic cardiacs.

The result may be various arrhythmias such as atrial extrasystoles, atrial tachycardia, atrial fibrillation as well as ventricular arrhythmias; extreme lethargy, apathy, muscular weakness, hyporeflexia, even paralysis. Hypotension and paralytic ileus may occur.

V. *Clinical Signs of Potassium Retention (Hyperpotassemia)*—associated with shock-like states, tissue destruction, acidosis and renal insufficiency. Arrhythmias are produced which are usually of slow rate such as nodal bradycardia and cardiac arrest.

VI. *Clinical Signs of Calcium Depletion (Hypocalcemia)*—usually associated with hyperpotassemia, especially in renal insufficiency, hypoparathyroidism after surgery, hyperventilation or severe gastrointestinal losses. It may also produce arrhythmias in addition to tetany or increased muscle irritability.

VII. *Clinical Signs of Calcium Retention (Hypercalcemia)*—may occur with metastatic disease, hyperparathyroidism, sarcoid, estrogen administration. May cause extrasystoles, lethargy, renal failure.

VIII. *Clinical Signs of Magnesium Depletion*—may cause arrhythmias; the other effects are still quite unknown. It may be a problem in chronic alcoholics with delirium tremens.

IX. *Clinical Signs of Acid-Base Problems*—usually reflected in respiratory abnormality, i.e., increase in depth of respiration with acidosis, decrease with alkalosis.

PATHOPHYSIOLOGY OF ELECTROLYTE AND WATER ABNORMALITIES AND ACID-BASE BALANCE

I. General Considerations:

It is much simpler and more accurate to express the quantities of electrolytes in terms of equivalent weights, i.e., molecular weight

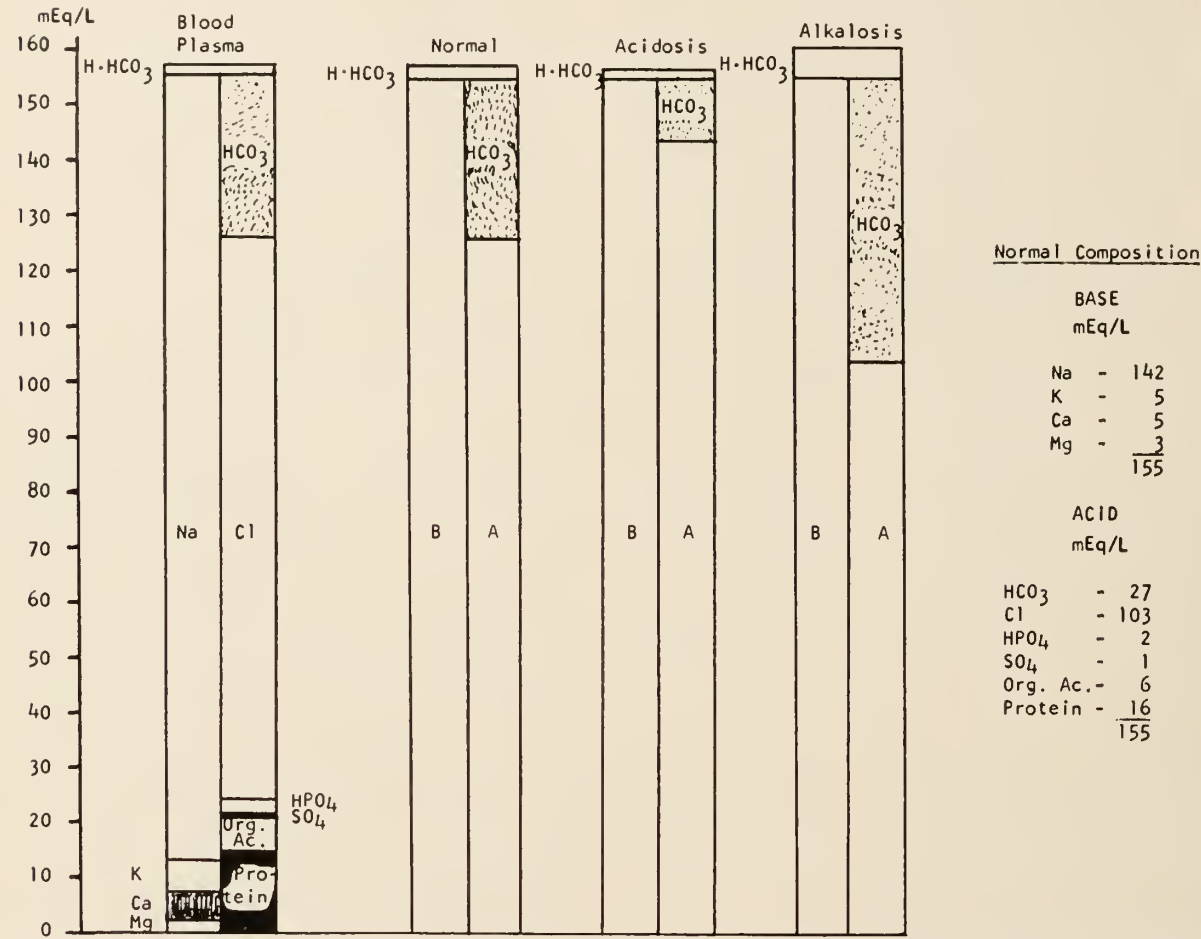
divided by valence. When dealing with the minute quantities of electrolytes in body fluids, we use the term milliequivalents (mEq), i.e., the equivalent weight divided by 1,000. One mEq. of an osmotically active substance exerts one miliosmole of osmotic activity and one mEq. of any element will exactly react, neutralize or exchange for mEq. of any other. (This would not be true when these elements are expressed in grams or milligrams.)

Gambles' diagram of the extracellular fluid electrolytes serves as a very useful and simple model (Fig. 1). For the sake of simplification we can think in terms of the total extracellular base consisting of approximately 140 mEq. of sodium and 15 mEq. of other base (potassium, calcium and magnesium). Similarly the total acids can be considered as consisting of 25 mEq. bicarbonate, 100 of chloride and 30 of other acids (organic and proteins). The sum of the anions (acid) = sum of cations (base) = 155 mEq./L. It is useful to remember that the serum chloride plus the serum bicarbonate plus 15 is usually equivalent to the serum sodium.

The sodium is the chief base (cation) and determines the extracellular volume; the organism guards its sodium very carefully because a rapid fall in sodium will cause a rapid shrinkage in extracellular volume and cause shock. Water usually follows the sodium; the latter serum concentration will usually indicate the water status. Potassium is the chief intracellular ion and has very little to do with the extracellular fluid; the chloride ion is the chief acid radical. The serum concentrations of electrolytes reflect the true levels only *after* equilibrium is reached. Immediately following sudden losses or gains the concentrations may be very misleading; time should be allowed for equilibration and this may take an hour or two. One further essential fact—the *extracellular fluid volume* expressed in liters is approximately 20 per cent

Figure 1

Plasma Electrolytes In Normal and Abnormal States



of the body weight when expressed in kilograms.

$$(E. C. V. (liters)) = \frac{B.W.}{5} (Kg.)$$

Keep in mind that total body content of a substance is quite different from its concentration in a fluid compartment and calculations cannot substitute for clinical interpretation.

The kidneys, if fairly normal, will readjust for losses or retention of water or electrolytes in order to maintain normal volume, osmolarity and pH of the extracellular fluids—restoration of the volume taking precedence. This is achieved by regulating the output of each electrolyte and water separately; aldosterone regulates distal tubular handling of

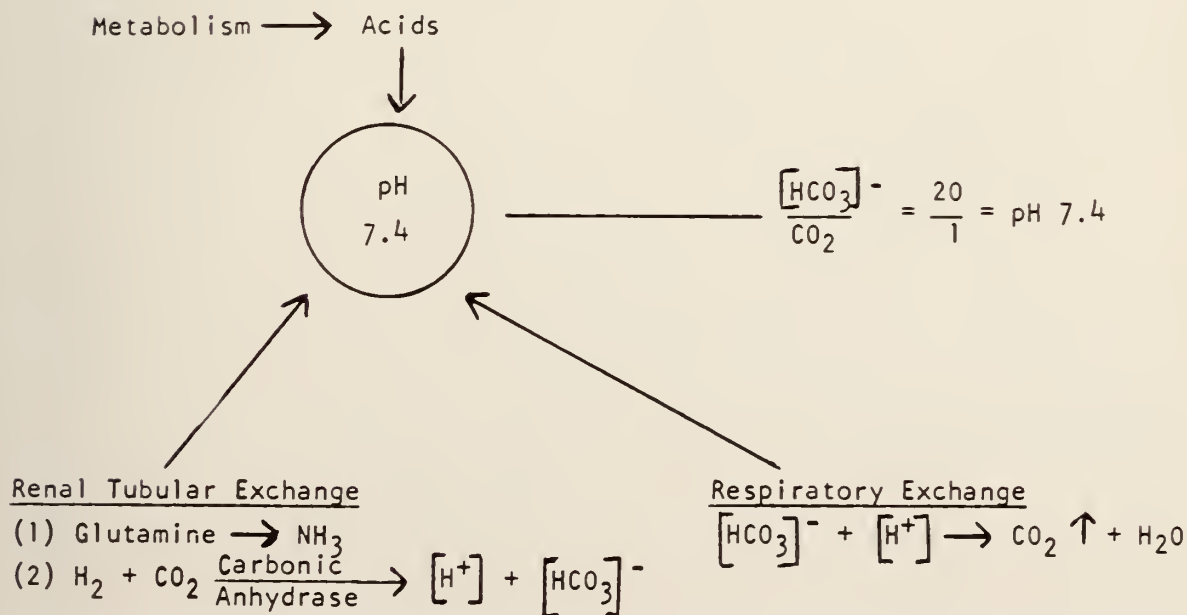
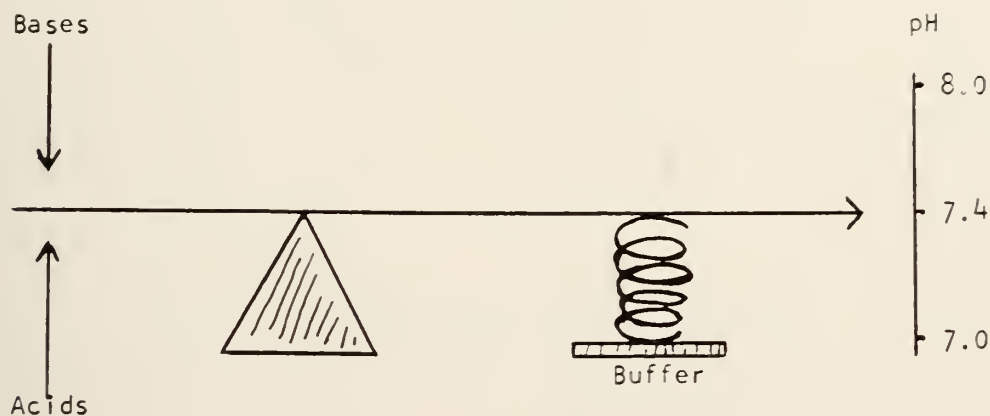
sodium and potassium and the ADH regulates the permeability of the distal and collecting ducts to water. The above mechanisms are functions of normal renal blood flow and the integrity of the tubular cell membrane. It is in situations of drastic reduction of renal blood flow that difficulties often arise.

II. Salt Problems

The major clinical situation occurs when there is excessive salt losses resulting in hyponatremia. It is useful to recall that the serum sodium concentration essentially reflects water balance more than actual sodium balance. Hyponatremia may in fact be apparent or real. Apparent hyponatremia may occur in association with normal total body

Figure 2

ACID-BASE BALANCE



sodium; there may be dilution of the normal amount of sodium in the extracellular fluid by excessive water, recording a low serum sodium concentration. True hyponatremia, on the other hand, occurs due to excessive

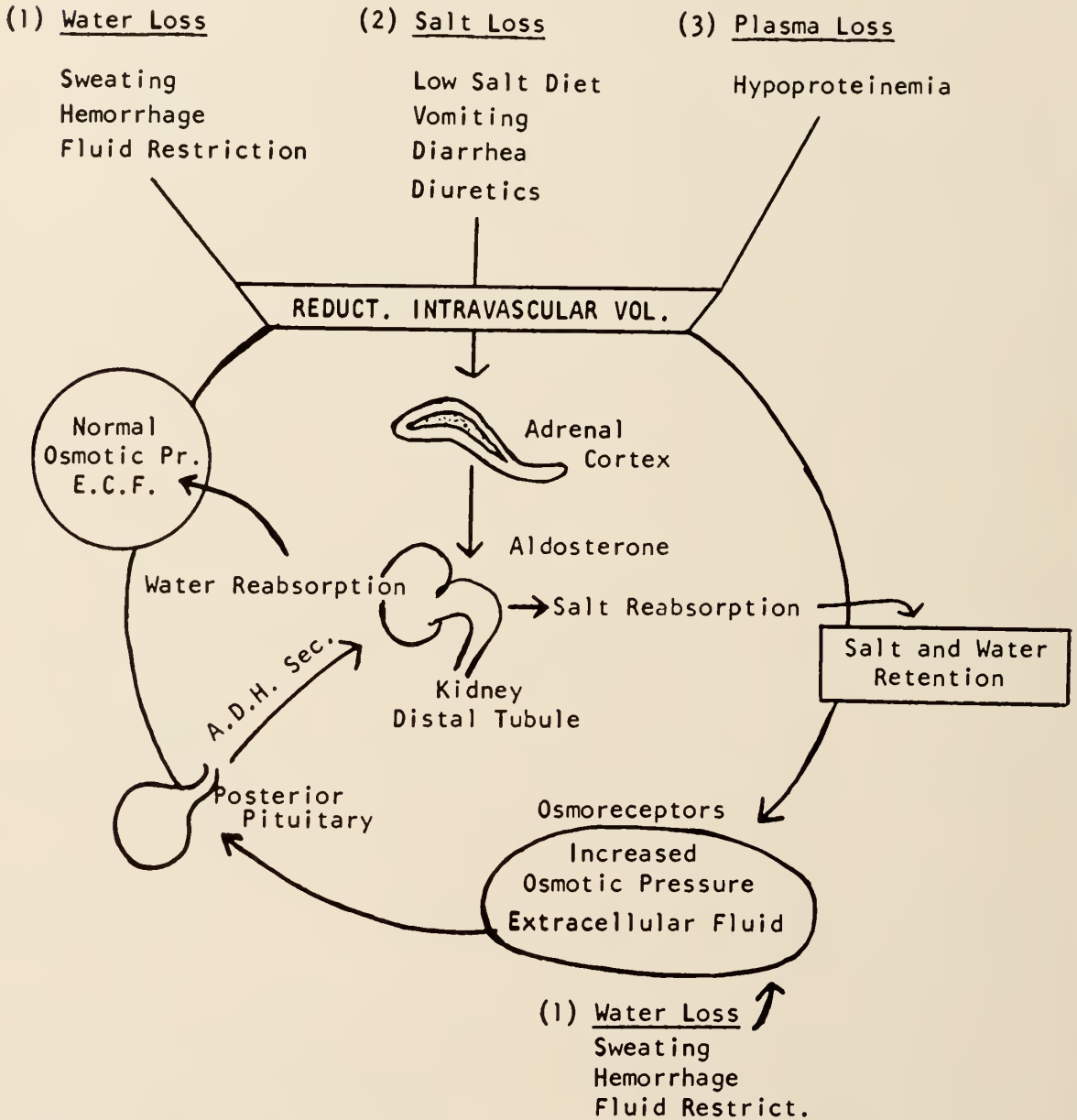
salt loss from the body which is reflected in the lower serum level.

(1). Real hyponatremia

a. Post surgical cases, such as ileostomies,

Figure 3

Regulation of Sodium and Water Balance



where, for all intents and purposes, a saline solution is being lost and is replaced with dextrose solutions by the physician.

b. Gastrointestinal obstruction with vomiting or diarrhea with water replacement.

c. Multiple paracentesis without salt replacement.

d. Renal sodium wasting and Addison's Disease.

In all of the above situations sodium is lost at the rate of 140 mEq. per liter and depletion

occurs because it is not replaced adequately. When measured, the serum sodium concentration will be low and the urine sodium will be almost zero and certainly below 10 mEq./L; the kidneys are trying to conserve sodium.

(2). Apparent hyponatremia

a. Lipemia tends to reduce the amount of circulating sodium.

b. Hypoglycemia does the same (each 200 mg. per cent increase of glucose results in a 5 mEq. drop in serum sodium).

c. The very sick cardiac, cirrhotic, or bronchogenic carcinoma—these set up the situation of “low salt syndrome” or “dilutional hyponatremia.”

d. May also occur with severe losses of potassium; sodium from plasma may replace the intracellular K^+ .

In the first two situations of (c), i.e., sick cardiac and cirrhotic, the stage is set by virtue of a low-salt intake and administration of diuretics or paracentesis. The osmoreceptors in various vascular organs respond inappropriately stimulating the post-pituitary, the result being an inappropriate antidiuretic action which causes retention of water. The bronchogenic carcinoma, however, may actually secrete an ADH-type of material. Clinically, the dilutional hyponatremic state can be recognized in a thirsty patient exhibiting a hypertonic urine and a low serum sodium; the urine sodium is usually greater than 10 mEq./L. A simple way of differentiation from true hyponatremia without actual quantitative test, involves spraying a sample of urine from a nebulizer into a bunsen flame. A yellow flame indicates sodium in excess of 10 mEq. The treatment obviously is *not* the addition of more salt but a decrease in intake of water plus measures to remove water.

III. Potassium Problems

There are only 60 mEq. of potassium in the extracellular fluid as contrasted to a total

body potassium content of 3500 mEq. The kidney is the chief regulator of potassium balance but equilibration is slow and eventually most of the potassium finds its way into the cells. The serum potassium is ordinarily a fairly reliable indicator of the potassium situation in the normal individual with good renal function. However, where there is acid-base imbalance the serum potassium level will be unreliable; in *acidosis*, the serum potassium is falsely high, while in *alkalosis* it is falsely low. A normal serum potassium in the presence of acidosis will actually indicate hypokalemia. In such situations the best test would be the determination of the urine potassium; if the excretion is less than 10 mEq./L chronic potassium depletion is indicated. In true renal potassium wasting the urine potassium is always greater than 30 mEq./L while in extra-renal potassium loss prior to total body depletion (diarrhea and post-surgical) the potassium excretion will be less than 20 mEq./L. This is a good differential point.

Tissue potassium depletion results in alkalosis because hydrogen and sodium ions will have to replace the missing potassium in the cells, leaving an excess of bicarbonate in the serum. Severe potassium losses may also be complicated by nephropathy (hypokalemic) with attendant losses of concentrating ability, chloride and sodium with resultant hypochloremia alkalosis. Chief extra-renal situations of hypokalemia and depletion are primary aldosteronism, corticoid administration, chronic diarrhea, diabetic coma and post-surgical cases where the potassium losses are replaced with potassium-free solutions. Excessive accumulation of potassium occurs chiefly in acute renal shut-down.

IV. Acid-Base Balance

The extracellular fluid is maintained at a pH of 7.4 very rigorously by a system of buffers which includes the carbon dioxide-bicarbonate, serum protein, hemoglobin and the phosphate systems. For all intents and purposes, however, the main buffer system that maintains acid-base balance is the bicarbo-

nate-carbon dioxide equilibrium. The Henderson-Hasselback formula; $\text{pH} = \text{pK} + \log \frac{\text{base}}{\text{acid}} = 6.1 + \log \frac{[\text{HCO}_3^-]}{[\text{CO}_2]} = \frac{20}{1}$ is the mathematical expression of this action. Since the end products of metabolism are acid in most situations, the problem becomes that of excreting the acids without losing base. This is achieved by the renal distal tubular function of replacing the sodium and potassium with hydrogen and ammonium ions leaving bicarbonate in its place; the latter can then be excreted either by the kidney or by the lungs in the form of carbon dioxide (Fig. 2). Excess alkali can be removed very easily by "blowing off" carbon dioxide. Clinical situations of importance are as follows:

(1). Respiratory acidosis—occurs in emphysema, pulmonary fibrosis, poliomyelitis or in chest wall abnormalities where the lung bellows cannot empty completely and carbon dioxide accumulates. The organism compensates by trying to breathe faster (tachypnea). As the carbon dioxide accumulates rapidly it will increase the denominator of the fraction $\frac{[\text{HCO}_3^-]}{[\text{CO}_2]}$; the bicarbonate in the numerator will have to increase proportionately (by renal action) to maintain the ratio at 20 to one and the pH at 7.4. The serum bicarbonate when checked, will thus be elevated. However, if CO_2 accumulation is excessively rapid so that the renal $[\text{HCO}_3^-]$ retention cannot keep pace, the pH may drop and a situation of respiratory acidosis occurs.

(2). Metabolic acidosis—occurs when acids in the blood accumulate faster than can be eliminated. The prime example of course is diabetic acidosis in which high concentrations of ketoacids are produced from excessive fat metabolism due to insulin lack; adequate amounts of insulin would normally drive metabolism through the carbohydrate rather than the fat cycle. Because of the acid accumulation excessive base (potassium and sodium) and $[\text{HCO}_3^-]$ are lost in the urine; the lungs try to reduce the CO_2 accumulation of the fraction by blowing off carbon dioxide rapidly (Kussemal respiration) however, a stage is reached where bicarbonate is lost

even faster and severe acidosis will result. A similar situation occurs in uremia and in situations of chronic renal disease where there is excessive loss of bicarbonate and base. Fever, dehydration, aspirin intoxication may all produce acidosis on a similar basis.

(3). Metabolic alkalosis—occurs primarily because of excessive ingestion of alkali or excessive chloride loss (as in vomiting). Chronic potassium loss with attendant depletion can result in alkalosis because sodium and hydrogen move into the cells to replace the potassium lost, leaving excess bicarbonate in the serum. As a rule, alkalosis is not much of a problem because the lungs can usually balance the bicarbonate increase by reducing the CO_2 loss and restoring the pH.

(4). Respiratory alkalosis—can occur in hyperventilation, febrile states and results in a low CO_2 . The kidney will compensate by reducing $[\text{HCO}_3^-]$ loss and lungs can correct also by slowing down the ventilation.

TREATMENT OF ABNORMALITIES

1. Physiological diagnosis—the deficiency must be pinpointed and this can be achieved by checking blood pressure, pulse, hematocrit, the condition of the skin, body weight, the urine specific gravity, potassium, sodium, chloride and bicarbonate in serum and sometimes in urine.

2. Restore blood volume—aggressive treatment of shock in order to restore the renal blood flow which is the chief homeostatic mechanism. Blood, colloids and vasopressors should be used vigorously.

3. Correct pre-existing deficits in electrolytes and water—a simple rule of thumb is as follows: divide the weight of the patient (kilograms) by five and then multiply this figure by the difference between the normal serum concentration of the ion in question and the patient's serum level of the ion, i.e.,

$$\text{ion deficit (mEq)} = \frac{\text{Wt. (kg)}}{5} \times (\text{Normal serum concentration} - \text{patient serum concentration}).$$
 The result will be in milliequiva-

lents of deficit of the particular ion. (This formula would not hold true for intracellular ions such as potassium). The deficit can be corrected by supplying the needed amount of the deficient ion (calculated) by the appropriate solutions to be discussed later. The deficit in water will usually be replaced while administering the electrolyte needed. Correction will be manifest when thirst and urine volume are returned to normal. No calculation is exact and replacement should be approximate.

4. Replace any continuing losses after the pre-existing deficit has been repaired. This would be true of continued vomiting, diarrhea, suction, sweating, etc. Oral replacement is the treatment of choice but this is not always feasible. Replacement should be that of similar solutions to those being lost. (See compositions of solutions below.) When the *pre-existing deficit* and the *extra losses* have been replaced *the urine flow should be at least 1 milliliter per minute*; this is minimum flow necessary prior to any potassium administration.

The normal bodily secretions per 24 hours are as follows: (this can be used for replacement)

a. Saliva—1,000 cc equivalent to 1,000 cc of $\frac{1}{2}\%$ salt solution or 500 cc normal saline

b. Gastric secretions—3,000 cc per day—high in chloride and low in sodium—similar to dilute hydrochloric acid and can be replaced by amount of saline containing the required chloride; the extra sodium will usually be excreted

c. Bile—700 cc—high in sodium bicarbonate. Can be replaced by Ringers Lactate

d. Pancreatic secretions—700 cc—high in sodium bicarbonate. Can be replaced by Ringers Lactate

e. Intestinal secretions—3,000 cc—small intestine is primarily saline, large intestine is saline plus potassium

5. Electrolyte and Water needs for maintenance—The conscious patient ingesting a

normal diet can take care of his water and electrolyte needs automatically. However, the unconscious or severely ill patient will require the following daily intake in the following situations:

a. Water without excessive sweating—approximately 2,000 cc for a 60 kilogram man. To be more exact, one milliliter of water is needed for every one calorie of diet.

b. Salt requirement—approximately 6 gms. per day (100 milliequivalents)—supplied by approximately 700 cc of saline or 6 gms. of oral salt (sodium chloride).

c. Potassium requirement—approximately 1-3 gms./day, (50 mEq.)

A rule of thumb for the daily maintenance requirement of the adult would be as follows:

	Calories	H ₂ O	NA+	K+	Cl
Average	3 cal. Kg.	1 ml/ cal.	3 mEq/ 100 cal.	2 mEq/ 100 cal.	2 mEq/ 100 cal.
70 Kg. Man	2100 cal.	2100 cc	63 mEq	42 mEq	42 mEq

6. Repair Solution—When feasible all repair should be achieved orally but this is not feasible in many situations. It is important to tailor the solution to the needs of the *deficit* and *maintenance*. The pre-existing deficit in milliequivalents is calculated by the formula discussed earlier and is added to the daily maintenance requirements (above) to supply the number of milliequivalents of sodium chloride, and potassium required; the volume of water required can also be estimated. The most useful all-around repair solution is Ringers Lactate because it is closely equivalent to extracellular fluid; it is similar to saline plus $\frac{1}{6}$ molar lactate. Ordinary saline solution is excessively high in chloride (chloride is 155 mEq. in saline but only 100 mEq. in serum). In some situations lactate would be replaced by sodium bicarbonate (diabetic acidosis where lactic acid accumulates). Darrow's solution is low in sodium and high in potassium and can be used in situations where sodium is not needed; it is primarily used in pediatrics. Potassium can be added quantitatively to any solution as needed. In acidosis, 1 ml. molar

lactate per Kg. of body weight will raise serum CO_2 1 vol. %.

7. Specific situations of importance:

a. Surgical cases—post surgery there is usually salt retention and potassium loss—always use glucose without salt unless there has been excessive salt losses but add potassium on a maintenance schedule. Deficits need not be repaired usually unless they are obvious. The total amount of glucose used would depend on the water and caloric need. Differentiation between post-operative water and salt retention and dehydration which are both signaled by oliguria would be as follows: Post-operative water retention would result in urine of low specific gravity containing 30 to 50 mEq./L. of sodium. Dehydration on the other hand would result in a urine of high specific gravity and less than 30 mEq./L. of sodium. Tubular necrosis following surgical shock would also be manifested by a low specific gravity but would be differentiated by a high urine sodium (60 to 80 mEq./L.) due to uncontrollable salt loss. The importance of differentiating the above three conditions is obvious since treatment would vary.

b. Dehydration—in acute situations, usually salt and water have been lost and rarely is there a potassium deficit. Either Ringers Lactate or saline in proper amounts would suffice. In chronic dehydration there is the additional loss of potassium and this must be added. In either situation it is important to observe the urine volume as replenishment occurs; when the volume reaches 1500 cc per 24 hours, or a milliliter per minute, then the water deficit has been corrected. Since the sodium to chloride ratio in the plasma is usually 1.4 to one, saline plus 1/6 molar sodium lactate or Ringers solution would be best.

c. Hypochloremic alkalosis due to vomiting—saline can be used and the excess salt will be excreted by the kidney.

d. Diarrhea, with sodium and potassium depletion and acidosis—saline plus sodium

lactate would be most beneficial. Extra potassium must be added.

SUMMARY

The pathophysiology of electrolyte, water and acid-base abnormalities are discussed. A logical procedure is as follows: identify the clinical situations where the abnormalities are apt to occur and then search for the clinical signs of depletion; these can be confirmed and pinpointed by objective measurements of circulation, serum and urine abnormalities (volume, specific gravity, electrolytes). The approximate deficiencies for clinical purposes can be calculated. Abnormalities will usually not occur in the conscious, alert patient on a normal diet and with fairly good renal and respiratory function.

Restoration of normality involves correction of the blood volume as rapidly as possible and treatment of shock; without good renal blood flow it is difficult to correct any deficit. Once this has been restored, the pre-existing deficit can be calculated from the formula given and the weight lost. After correcting the pre-existing deficit, continuing losses must be replaced by measurement and the maintenance fluid and electrolytes supplied. Daily maintenance requirements are indicated.

Oral replacement is preferable when feasible, however, various repair solutions can be tailor-made to effect replacement. The best all-around repair solution is Ringers Lactate or saline plus 1/6 molar lactate.

When electrolyte, water and acid-base problems are considered from a practical and physiological viewpoint, there will be very few situations where correction cannot be made rapidly. It is always wise to remember that the homeostatic mechanisms will help re-establish normality if given a chance; conservatism is the watchword. It is always best to correct a little below calculated levels. The purpose of therapy is not to correct abnormal blood chemical concentrations but to make a sick patient well.

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J O B S O B I E S K I W E A T H E R L Y

By

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The subject of this paper, Job Sobieski Weatherly, was born at Bennettsville, Marlborough County, South Carolina on July 8, 1828, the year that Wohler performed the first organic synthesis, that of urea, from two inorganic compounds, potassium cyanate and ammonium sulfate.

His father, Job Weatherly, was a native of Maryland and his ancestors, who were of English descent, had settled in South Carolina during the Revolutionary War. His grandparents on the maternal side, the McRaes, emigrated from Scotland to South Carolina. His mother's father served in Marion's division during the Revolution.

Job's eldest brother, Thomas Christopher Weatherly, was a planter in Marlborough County, but occupied a number of prominent offices. He was tax collector at 21 years of age and afterwards was sheriff. He served in the Senate from Marlborough County. Job was indebted to his brother Thomas for the selection of medicine as a profession.

Young Job received his education at the Bennettsville High School, South Carolina, and read medicine under the direction of Dr. Alexander McLeod of his home town. After

two years of study with Dr. McLeod, he went to New York City where he was a private pupil of Dr. Philip Augustus Aylett. He enrolled in the Medical Department of the University of New York and received the M.D. degree in 1849. In July 1851, he opened his office for the practice of medicine in Adairsville, Georgia but after one month moved to Palmetto, Coweta County, where he established himself in a profitable practice. In January 1857, he moved to Montgomery, Alabama, which was one of the centers of medical practice in the South. Dr. Weatherly rapidly acquired a prominent position in his new location.

Dr. Weatherly offered his services when war was declared in 1861 and he was appointed Surgeon of the hospital at Shiloh in April, 1862. On his return to Montgomery, he was appointed Medical Purveyor to the Department of Mississippi. Shortly afterward, he was ordered to Savannah, but due to sickness in his family, he sent in his resignation and returned to his home. He was offered an appointment in the local hospitals but declined, and except when his services were needed, confined himself to his private practice.

In 1866, in conjunction with Doctors Baldwin, Gaston, Michel, and others, he helped organize the Montgomery Medical and Surgi-

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cal Society, of which he served as president for three years.

The Medical Association of Alabama was organized on December 2, 1847 but suspended operation during the War. On March 3, 1868, Dr. Weatherly represented the Montgomery Medical and Surgical Society at the reorganization meeting of the Alabama State Medical Association in Selma.

The American Medical Association held its annual meeting in May, 1868 in Washington, D. C. at which six southern delegates were present for the first time since the beginning of the War. Dr. W. O. Baldwin and Dr. Weatherly were delegates from the Montgomery Medical and Surgical Society. Both of them were elected to membership at that meeting. Dr. Weatherly was appointed to the nominating committee and was successful in getting Dr. Baldwin elected President of the American Medical Association on May 7, 1868. Because of the way Dr. Weatherly had championed his claims for Dr. Baldwin and because Dr. Baldwin vindicated his claims, Dr. Weatherly made many warm friends who showed their appreciation of his courage and manliness by nominating and electing him unanimously for first Vice-President of the American Medical Association in his absence in 1870, a fact hitherto totally unprecedented. In May, 1871 he attended the next meeting which was held in San Francisco. Dr. Alfred Stille of Philadelphia was the president at that meeting but Dr. Weatherly, as First Vice-President, presided a considerable portion of the time. It was while he was presiding that the question of female representation in the Association was brought up by some of the Philadelphia delegates. The advocates and opponents of the question displayed much warmth in their tempestuous debate. Finally a resolution was introduced to refer the question to the local societies in Philadelphia and Dr. Weatherly was highly complimented by the members for his judicious and impartial conduct while in the chair.

At the 1870 meeting of the State Association in Montgomery, March 15-17, a discussion on Malaria and especially hemorrhagic

Malaria was held. The Association issued an address through the newspapers to the planters and landowners of the state urging the necessity of a thorough system of drainage for the purpose of diminishing the prevalence of malaria. The address was signed by J. S. Weatherly, chairman, R. F. Michael and J. B. Gaston.

At the annual meeting of the American Medical Association which was held in Philadelphia in 1872, Dr. Weatherly as Chairman of the Committee on Medical Education presented a report in which he, after deploring the fact that the Association had hitherto taken no steps to carry out the prominent ideas which led to its formation, the improvement of Medical Education in this country, recommended "that an appeal be addressed by this Association to the different state authorities, advising that no more charters be granted to medical colleges which do not agree to adopt the plan of teaching which this Association shall hereafter recommend as the guide for all medical colleges in the Union. Further, that when institutions already chartered fail to adopt, or fall below the standard adopted and approved by this Association, the state authorities (acting for the good of the people) shall cause a surrender of the charters of all such institutions. And that the scheme of one or more national medical colleges, as suggested and advocated by Dr. W. O. Baldwin in his presidential address in 1869, is feasible and proper, and should be prosecuted to a successful issue."

In 1875, in his presidential address before the Medical Association of the State of Alabama, Dr. Weatherly made the following suggestion, "The great, and in my opinion, the paramount obstacle to the rapid improvement and prosperity of the state is Malaria . . . Now many will contend, probably, that Malarial diseases do not come under the head of preventable but History will sustain me in saying that if Malaria cannot be entirely suppressed, its effects can in a great measure be gotten rid of by proper attention to drainage, cultivation, etc. . . . it would be a wise policy and a real measure of economy for the state government to adopt some system

looking to the gradual drainage of those portions of the state most subject to malarial influences."

Time has proven that Dr. Weatherly was correct in his theories concerning the value of proper drainage in the prevention of Malaria. His theory was proven by Sir Ronald Ross when he observed the Malaria parasites of man growing in the *Anopheles* mosquito on August 20, 1897.

Within the next few years, the citizens of the state of Michigan adopted Dr. Weatherly's suggestion and reclaimed millions of acres of land by drainage and improved the health of the people. Other states and countries have followed their example.

His address on Syphilis at the 1877 meeting of the Medical Association of the State of Alabama is a masterpiece in calling attention to what should be done to enlighten people concerning the effects of the disease and mentioned that the disease could be communicated by that most innocent and pleasant custom ladies have of kissing their friends.

In May 1872, at the Philadelphia meetings, 123 of the members who had crossed the Rocky Mountains in 1871 to attend the San Francisco meeting organized the Rocky Mountain Medical Association. Its purpose was solely social and memorial. It had its origin in a desire to perpetuate and keep fresh the friendships formed among the physicians who actually crossed the Rocky Mountains to attend the 1871 meeting. Dr. Weatherly was the only delegate from Alabama. Its first president was Dr. W. L. Atlee and he gave an address at the next annual meeting. The meetings were continued at each of the next five annual meetings. The six presidential addresses and biographical sketches of the members were collected, edited and bound in a handsome memorial volume, Address before the Rocky Mountain Medical Assoc., by Dr. J. M. Toner, who delivered the fifth lecture, Washington, D. C., 1877.

At the death of "Job," the buggy horse of Dr. Weatherly, Dr. W. O. Baldwin secured

one of the "Bloods" of Kentucky and presented it to Dr. Weatherly and in the presence of a few friends delivered one of his most touching and sincere speeches, although at times it had a definitely humorous vein. Dr. Baldwin had owned "Job" and little dreaming that Dr. Weatherly might purchase him, had as a delicate compliment to the doctor, given the horse his name. It seems that "Job" had demolished several buggies and sets of harnesses for Dr. Baldwin and in Dr. Weatherly's acceptance speech, which includes many warm remarks and expressions that were directed to both Dr. and Mrs. Baldwin, he referred to these incidents as practical jokes which "Job" had quit some years previously because of his love for his new master. Dr. Baldwin's speech was in reality a beautifully worded tribute to Dr. Weatherly and "Job's" death provided the occasion for Dr. Baldwin to make a public acknowledgment of his esteem and affection for his sincere friend and associate.

Dr. Weatherly was a member of the Board of Health of Montgomery as well as that of the state. He was a member of the Medical Association of the State of Alabama and was elected President in 1874. He was a member of the Montgomery Medical Society, and its president in 1869, 1870 and 1879. He was an honorary member of the California State Medical Society and of the Gynecological Society of Boston.

Dr. Weatherly contributed several valuable papers to the medical literature. They included the following subjects: glossitis, puerperal convulsions, polypoid tumors of the uterus, diabetes and its treatment, opium habit, hemorrhagic malarial fever, diseases of the cervix uteri, syphilis and its prevention by state action, epithelial cancer of the neck of the womb, and amputation of neck and recovery.

At the 1871 Mobile meeting of the Medical Association of the State of Alabama, he delivered an address on Medical Education. At the 1872 meeting of the Association in Huntsville, he delivered the annual oration on: "Woman: Her Rights and Wrongs."

He was of refined and cultivated taste and with social qualities of a high order. He was a great favorite in the highest circles in Montgomery. His sterling qualities of head and heart endeared him to a host of warm personal friends in all parts of the country.

Dr. Weatherly was married in 1852 to Miss Eliza George Gilmer Taliaferro, daughter of Colonel C. B. Taliaferro, nephew of the ex-Governor of Georgia. They had six sons and the eldest, Charles Taliaferro Weatherly, graduated at the Atlanta Medical College. His second son, James Meriwether (b. 1856) Weatherly received the LL.B. degree from Alabama in 1878 and was a lawyer in Birmingham.

Dr. Weatherly died of heart failure on June 29, 1891. He was buried in Oakwood Cemetery, Montgomery.

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LONG TERM THERAPY WITH GUANETHIDINE AND ASSOCIATE ANTIHYPERTENSIVE DRUGS*

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As yet, we have no panacea for treating hypertension. In the treatment of moderate, severe or malignant arterial pressure, the only answer to the problem today is still dependent upon the selection of the proper drug according to the degree of severity.

Among the gamut of hypotensive agents, we find *Rauwolfia serpentina*, *Veratum viride* or *album* and their extracts or alkaloids, hydralazine, the autonomic ganglion blocking agents, such as the hexamethonium compounds, pentolinium, chlorisondamine, mecamlamine, the various forms of thiazides and most recently, guanethidine and a combination tablet of reserpine, hydralazine hydrochloride and hydrochlorothiazide. The latter two drugs have been studied intensively and reported on previously by the investigator.¹

Dr. Schultz is a graduate of Georgetown University School of Medicine and is a special lecturer in the School of Chemistry at Auburn University, Auburn, Alabama. He is Governor of The American College of Cardiology for the State of Alabama, member of the medical service, Lee County Hospital, Opelika, Alabama, and on the consulting staff of St. Margaret's Hospital in Montgomery, Alabama, and the consulting staff of the State Department of Education, Division of Vocational Rehabilitation.

Purpose

The purpose of this paper was not to add to the clutter of literature on the theoretical aspects of treating hypertension, but to update the effective results we have achieved with guanethidine, and a single tablet of three highly effective antihypertensive compounds over the last two years. This continued study of the drugs was extended because of the success the investigator had had with them in anti-hypertensive therapy in the earlier studies.² Our extended evaluation therefore, included examination of a large group of patients who had been taking guanethidine and another group who had been taking the triple combination tablet, Ser-Ap-Es® (reserpine, hydralazine hydrochloride and hydrochlorothiazide).

Over the past several years, and to date, our hypertensive patients have been categorized as either mild, moderate, or severe. For the purpose of our extended study, the patients were again divided with reference to drug therapy. Guanethidine was used in

* (guanethidine is Ismelin® (CIBA), reserpine, hydralazine and hydrochlorothiazide is Ser-Ap-Es® (CIBA)).

our more severe hypertensives and Ser-Ap-Es® in our milder and less severe forms.

Twenty of our original 50 patients who were placed on guanethidine two years ago are still taking this drug with good effect. From time to time, however, when edema became a problem, hydrochlorothiazide in the form of Esidrix® or Esidrix-K® (with potassium) was added for short periods.

In the second group, 25 patients had been started two years ago on reserpine, hydralazine hydrochloride and hydrochlorothiazide. Originally, this group was given the drugs separately.⁶ However, as the study progressed, it was found that they responded just as readily to a combination tablet containing all three drugs. Thus it was decided to maintain them on the combination tablet.

Pharmacology

A quick summation of the pharmacologic action of these drugs may be pertinent. Guanethidine has been shown to act at the terminals of the sympathetic nervous system.³ Perry and Campbell⁴ also found that guanethidine potentiated pressor responses to epinephrine. It appears to oppose the release of the pressor substance, norepinephrine, by acting at the nerve-arteriole junction (Figure I). Guanethidine is unique in that it does not interfere with the normal physiology of the autonomic ganglion. One can readily see, therefore, that its action differs from available antihypertensive agents.

The rauwolfia compounds inhibit norepinephrine through the central nervous system, while ganglionic blocking agents inter-

THE SITE OF ACTION OF ISMELIN AND GANGLIONIC BLOCKERS

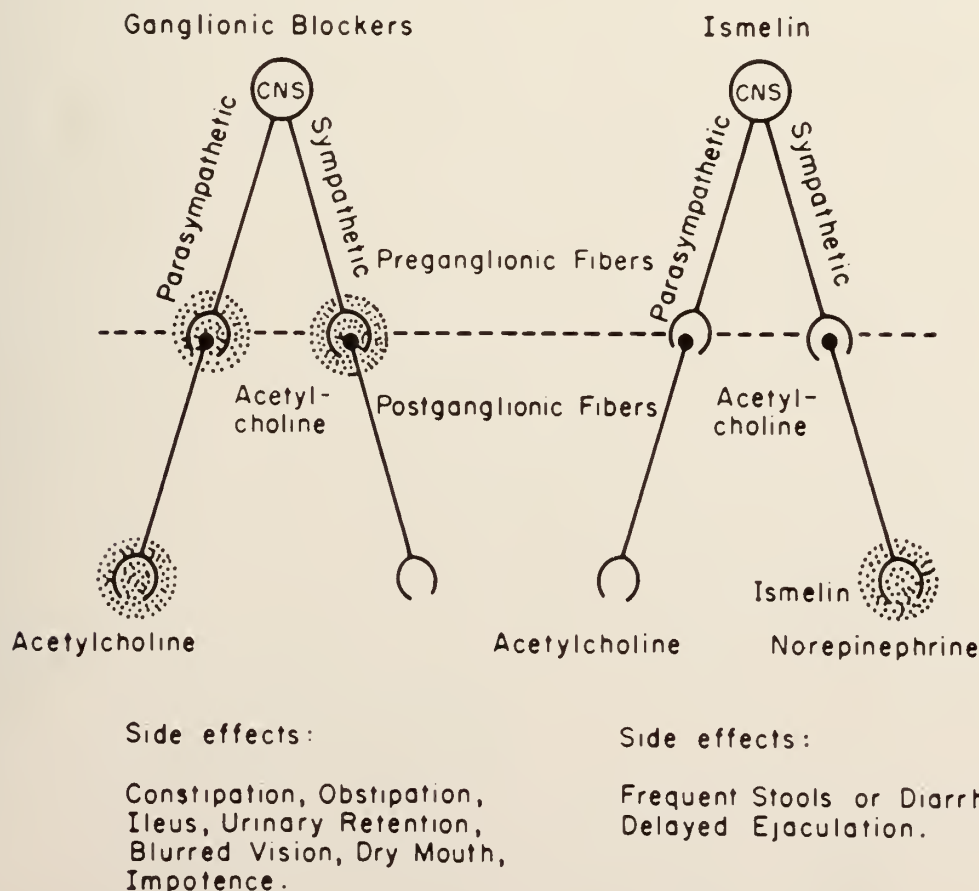


Figure I.

rupt the transmission of pressor impulses at the sympathetic ganglia level.

Apresoline® increases blood flow to the kidneys which helps prevent renal ischemia. It also relaxes cerebral vascular tone thus helping to relieve some of the minor cerebral hypertensive symptoms.

On the other hand, Esidrix® helps control edema due to cardiac decompensation and often permits relaxation of salt restriction.

Materials and Methods

Approximately 75 patients have been treated with guanethidine, Ser-Ap-Es® and diuretics such as Esidrix® and Esidrix-K®, for varying degrees of hypertension. Running records have been kept of treatment and progress.

In the initial study, 50 patients were treated with guanethidine and hydrochlorothiazide. Of these original 50, five expired and seven moved from the community. Those patients remaining with the study have either been on Ismelin®, Ismelin® and Esidrix® or Ser-Ap-Es® with intermittent treatment of Ismelin®, and Esidrix®, and Esidrix-K.®

During the past two years, a number of patients on Ismelin® have been added to the original 50. These patients will be discussed later. Table I shows the progress of 20 of the original group treated with Ismelin® alone over a period of two years. Table II shows a record of those who were started two years ago on reserpine hydralazine hydrochloride and hydrochlorothiazide. Table III shows some of the newer patients who were started on Ismelin®, Ismelin® and Esidrix® and/or Esidrix-K.®

Discussion

There are so many antihypertensive drugs being evaluated these days for such short periods of time, that for the most part, the evaluations are practically useless. In our opinion, a more thorough evaluation of a

drug is one where the drug is examined under rigid conditions and for long periods of time. Maintaining strict records of drug ingestion, blood pressures, supervised food and rest and frequent laboratory tests should always be included in a study.

As stated earlier in the introduction to our article, strict evaluation was made of two groups of patients who were treated over a fairly long period of time with a specific drug, or a set combination of drugs. We were not observing particularly for specific side effects, nor were we looking for how much or how little to give any patients or group of patients. Our patients were merely individuals with moderate to severe hypertension who showed good response to a drug and were maintained on this medication, as long as it controlled their hypertension at moderate levels.

The Ismelin® group, after they were stabilized, were seen at monthly intervals and were instructed to return to the office if any serious or untoward side effects developed. The group consisted of six males and 14 females ranging in age from 34 to 76. The same type of physical examination made in the original¹ study was repeated in all the new patients.

For those of us who treat patients either in our offices or for short periods of time in the hospital, we should know our prescribed medication's action and remain constantly aware of possible adverse reactions. Moreover, if a new drug is introduced, we would naturally want to know what side effects to expect. However, it is always necessary to differentiate between symptoms and drug side effects.

With the use of guanethidine, several side effects have been mentioned in the literature. These may be dizziness, due to postural hypertension. (Most all patients with moderate to severe hypertension will complain of headaches and dizziness.) There may be an increase in bowel movements. (Some of our older patients who were more or less constipated remarked that their BM's were much better after taking the guanethidine. None of

LONG TERM THERAPY WITH GUANETHIDINE

TABLE I

Individual Responses of Patients treated c ISMELIN

PATIENT NO.	SEX	AGE	B.P. BEFORE Rx	PULSE BEFORE Rx	WGHT BEFORE Rx	B. P. AFTER 6 Mo. Rx	PULSE AFTER 6 Mo. Rx	WGHT. AFTER 6 Mo. Rx	B. P. AFTER 1 YEAR	PULSE AFTER 1 YEAR	WGHT AFTER 1 YEAR	B. P. 18 MONTHS	PULSE 18 MONTHS	WGHT. 18 MONTHS	R. P. 2 YEARS	PULSE 2 YEARS	WGHT. 2 YEARS	SIDE EFFECTS
1	M	53	230 140	88	226½	190 110	78	235	168 130	84	232½	200 150	90	239	162 102	86	241	None*
2	F	42	110 154	90	231	90 134	78	229	74 140	72	228	84 136	74	224	96 132	72	234	None
3	F	76	98 150	78	190	92 150	84	184	98 170	88	195	88 194	72	183	90 154	84	181½	None*
4	F	64	96 174	66	200	90 168	60	209	118 138	66	200	126 138	72	201	96 110	62	202½	None
5	F	64	104 178	78	152	106 152	78	150	96 142	78	148½	98 144	84	155	74 152	78	156	None
6	F	71	104 150	84	172	100 150	72	173	84 130	78	173	100 170	72	180½	84 136	74	169	None*
7	F	67	88 180	108	147½	86 208	102	151	62 132	96	148	104 130	96	144	88 190	78	147¾	None
8	F	67	120 150	96	196	126 150	96	213½	80 152	66	220½	90 148	78	219	120 130	88	217	None*
9	F	65	100 180	94	155	82 150	66	157	88 144	84	157	100 150	78	151½	88 140	84	151	None
10	F	63	120 130	84	146	86 160	66	143	82 148	70	141	94 124	84	138½	78 152	78	125¾	None
11	F	51	90 174	102	180	106 130	84	181	100 148	96	181	100 174	84	180	100 160	90	179	None
12	M	34	100 150	60	214	84 148	60	194	90 164	68	193	110 168	72	213	108 186	84	204	None*
13	M	43	90 180	72	186	94 180	72	188	108 130	72	187	118 168	72	187	130 180	72	179	None*
14	F	52	108 150	78	213	112 128	72	204	92 154	74	202½	112 168	78	202	110 140	72	210	None*
15	F	48	98 170	78	190	90 180	84	182	102 144	72	199	110 184	76	197½	94 152	84	198	None*
16	F	65	94 190	74	166	100 162	72	165	92 162	84	164	110 182	84	153	96 174	88	148	None
17	M	52	90 190	96	200	78 150	84	193	82 144	78	194½	98 160	90	194	90 142	74	195	None
18	M	61	110 200	90	163½	100 140	66	163	110 124	66	165	105 138	84	168	98 158	72	162	None
19	M	60	112 190	90	194	92 170	84	203	80 178	60	197	92 220	84	186½	94 146	78	190	None
20	F	65	100	78	109	80	60	109	84	72	107	100	68	112	70	78	112	None

*Esidrix and/or Esidrix-K - added PRN

our patients reached a point where there was frank diarrhea.)

We all know, most of our older patients and some of our newly acquired hypertensives, usually note weakness and fatigue as one of their complaints.

In the studies performed by this investigator, Ismelin® was never given in doses large enough to cause any of the above mentioned side effects. Nasal stuffiness,⁵ al-

though reported by others, was not observed by us. There were several males (in the older age group) who complained of impotence. But this last side effect was eliminated by reducing the dosage. (Moreover, under careful supervision, side effects, if they occur, can be quickly controlled.)

It must be noted here, that for the moderate to severe hypertensives, whose systolic pressures were 180 or above and diastolic

TABLE II

Patients treated over a two year period with SER-AP-ES

PATIENT NO.	SEX	AGE	B.P. BEFORE Rx	PULSE BEFORE Rx	WGHT. BEFORE Rx	B.P. AFTER 6 Mo. Rx	PULSE AFTER 6 Mo. Rx	WGHT. AFTER 6 Mo. Rx	B. P. 1 YEAR	PULSE 1 YEAR	WGHT. 1 YEAR	B. P. 18 Mo.	PULSE 18 Mo.	WGHT. 18 Mo.	B. P. 2 YEARS	PULSE 2 YEARS	WGHT. 2 YEARS	SIDE EFFECTS
1	F	69	164 102	84	157	134 82	66	156	174 104	78	157 ³ / ₄	158 100	78	158 ¹ / ₂	132 90	68	159	None
2	F	52	150 100	78	197	132 94	66	204	132 90	84	192	152 98	90	195	158 96	72	195 ¹ / ₂	None
3	M	65	240 130	82	233	242 118	84	235	200 100	66	234	228 128	72	234	188 150	84	234	None
4	F	44	198 120	102	155	170 110	78	153	132 86	80	147 ¹ / ₂	128 102	84	148	130 90	108	150 ³ / ₄	None
5	M	57	210 114	90	209	200 118	86	206 ¹ / ₂	190 110	96	210 ¹ / ₂	190 108	88	218	164 90	84	213 ³ / ₄	None
6	M	37	190 100	72	204	158 80	80	208	138 88	78	205	152 94	72	205	158 98	78	206	None
7	F	65	156 102	72	192 ¹ / ₂	150 100	84	190 ¹ / ₂	164 100	72	192	136 94	66	186 ¹ / ₂	160 110	78	179	None
8	F	63	190 120	84	215	152 108	78	209	134 82	74	207 ¹ / ₂	142 86	66	208	174 110	84	208 ¹ / ₂	None
9	F	49	152 84	66	122 ¹ / ₂	140 92	72	124 ¹ / ₂	138 82	68	129 ¹ / ₂	140 86	68	123 ¹ / ₂	140 90	78	126	None
10	M	42	170 104	104	230	138 112	108	237	126 108	94	239	118 128	96	236 ¹ / ₂	160 102	90	223	None
11	F	61	206 120	72	199 ¹ / ₂	150 90	78	196 ¹ / ₂	130 82	74	195 ³ / ₄	150 86	72	200	155 110	84	201 ¹ / ₂	None
12	M	66	184 122	84	125	160 88	90	125	154 72	78	128	160 88	60	127	180 96	74	126	None
13	M	72	164 130	66	220	190 108	78	215	130 100	66	224	160 80	60	212	158 120	84	206 ¹ / ₄	None
14	F	80	158 84	78	168 ¹ / ₂	140 98	72	169	180 78	84	165	130 80	78	165	182 98	72	159	None
15	M	74	148 96	54	161	190 78	78	146	130 90	66	150	140 74	58	153 ¹ / ₄	170 96	66	153 ¹ / ₄	None
16	F	52	176 108	92	123 ¹ / ₂	158 130	88	124 ¹ / ₂	142 90	84	123	190 104	72	128 ¹ / ₂	190 120	78	126	None
17	F	49	178 90	60	176	186 96	74	183 ¹ / ₂	170 84	78	185	150 110	78	178 ¹ / ₂	154 108	66	187	None
18	M	56	190 100	96	215	128 100	60	209	136 78	66	208 ¹ / ₂	170 78	72	209	150 80	78	205 ³ / ₄	None
19	F	79	190 108	84	181	122 68	66	187	130 98	88	186	138 100	86	180 ¹ / ₂	126 102	62	185	None
20	F	38	160 120	88	176	140 74	96	175	240 84	84	176	134 100	84	159	162 64	84	157	None
21	F	49	184 108	76	244 ¹ / ₂	148 96	78	238 ¹ / ₂	140 96	66	249 ¹ / ₂	168 90	66	249	180 104	84	245 ¹ / ₂	None
22	F	62	180 118	84	182	210 90	70	183 ¹ / ₂	162 90	90	181 ¹ / ₂	168 108	86	179 ¹ / ₂	160 120	78	184	None
23	F	83	160 100	78	176 ¹ / ₂	112 108	86	175	140 94	74	172	142 98	68	169 ¹ / ₂	124 90	84	177	None
24	F	46	194 102	86	162 ¹ / ₂	172 90	78	166 ¹ / ₂	148 90	66	167	158 100	78	169	120 102	84	170 ¹ / ₂	None
25	F	51	120 72	174 ¹ / ₂	98	96	175	110	110	78	159 ¹ / ₂	90	88	166 ¹ / ₂	78	72	164	None

pressures 115 and above, guanethidine works rapidly in reducing both the systolic and diastolic pressures. The addition of Esidrix-K® apparently brings the pressures down more smoothly.

Patients presenting ankle edema were given Esidrix® or Esidrix-K®. This additive not only led to a subsidence of edema, but many patients expressed a general feeling of well being with the addition. Possibly, the

TABLE III

PATIENT NO.	SEX	AGE	B. P. BEFORE Rx	PULSE BEFORE Rx	WGHT. BEFORE Rx	B. P. AFTER 1 MONTH	PULSE AFTER 1 MONTH	WGHT. AFTER 1 MONTH	B. P. AFTER 2 MONTHS	PULSE AFTER 2 MOS.	WGHT. AFTER 2 MOS.	B. P. AFTER 3 MOS.	PULSE AFTER 3 MOS.	WGHT. AFTER 3 MOS.	SIDE EFFECTS
1	F	51	180 110 194	90	222½	160 104 240	84	233	142 102 190	66	237	162 100 174	84	235	None*
2	F	40	106 260+	90	146	124 178	84	148	120 168	86	147½	104 130	74	147	None*
3	F	62	118 232	78	140	120 188	84	137½	108 154	72	137	84 146	78	136½	None*
4	F	57	138 204	114	149	110 198	84	143	100 174	72	145	92 156	68	143	None*
5	M	47	122 210	70	190	124 180	76	187	124 172	72	186	102 168	72	188½	None*
6	F	43	120 260+	108	147	116 194	96	145½	110 178	80	144	104 214	84	143	None*
7	F	49	154 170	104	188	128 150	86	186	104 190	80	189	118 212	82	196	None*
8	F	38	110 154	96	179	100 186	90	179½	130 162	90	177½	136 160	96	177½	None*
9	M	54	108 196	88	180½	124 228	72	185½	110 190	84	183	104 184	84	181	None*
10	F	75	110	96	188	120	84	186½	108	84	186	100	84	186	None*

*Esidrix or Esidrix-K

increased urinary output and ensuing weight reduction added to this sense of well being. In some instances, however, a paradoxical situation developed. The feeling of well being caused some patients to overeat with a resultant gain in weight and rise in blood pressure. These patients were, of course, immediately alerted to their problem and measures were taken to avoid such future incidents.

Apropos the addition of hydrochlorothiazide—after dry weight was obtained, Esidrix® was immediately discontinued and only added if the patient again showed signs of edema. When it was noted that our patients were losing large amounts of fluids, we added the potassium to their diet as a safety factor. However, we no longer find this necessary since the manufacturer has now added potassium to their diuretic in the form of Esidrix-K® tablets. Potassium deficiency thus is no longer considered a problem with us.

Some interesting examples of Group I and II follow:

Patient No. 8 (Table I) who has run a consistently high systolic and diastolic pressure over a two year period has not, up to this time, shown any side effects and has been taking 25-35 mgm. Ismelin® daily (with an occasional dosage of Esidrix-K®). This is also true in patient No. 20 and No. 12 of Table I. Patient No. 4 (Table III) is a 40 year old white female weighing 151 pounds. Her original blood pressure was 194/106. She was treated conservatively with fair results. She was then placed on Ser-Ap-Es® t.i.d. After increasing her Ser-Ap-Es® to q.i.d. with no appreciable drop in pressures, it was felt that she would be a good candidate for Ismelin® and Esidrix-K®.

At the time, her blood pressure was 190/120. She was placed on 20 mgm. b.i.d., and one Esidrix-K® tablet after breakfast. In one week her blood pressure had dropped to 174/104 with no side effects and she stated

she felt much better. Her weight had dropped to 147.

With the completion of this two year study, Ismelin® still presents evidence of being an effectively potent hypotensive drug. Its potency apparently is increased by adding Esidrix® or Esidrix-K®. Patients on the latter regime expressed a sense of well being with the elimination of their previous symptoms. Their average daily dose of Ismelin® was 25 mgm. If Esidrix® or Esidrix-K® was given, the daily dose of either compound was 25 mg. [The Esidrix with K tablet contained 500 mgm. of potassium chloride.]

As shown in Table II, those patients who had slight to moderate pressure elevation, were started on one Ser-Ap-Es® tablet after breakfast. If necessary, the dosage was increased to two tablets, one after breakfast and the other after lunch. Excellent results were obtained on this dosage in the great majority of patients with mild to moderate degrees of hypertension. However, if the hypertensive levels persisted, the Ser-Ap-Es® was discontinued and Ismelin® started. It might be noted here, that at no time were there any side effects or difficulties in the exchange of these drugs.

For the mild to moderate hypertension, the Ser-Ap-Es® has been found to be an excellent drug of choice. As we noted earlier, it is a pharmacological combination of reserpine, and hydralazine affecting the hypothalamus and vasomotor centers. With hydralazine acting on arteriolar smooth muscle, a better blood flow through the kidneys is produced. The experiences which most of us have had with thiazides in hypertension need no further discussion of the thiazides on our part. However, the combination tablet of reserpine, hydralazine hydrochloride and hydrochlorothiazide makes a most convenient method of prescribing effective antihypertensive therapy. As we noted earlier, it is a single tablet rather than separate tablets, and permits the elimination of mix-ups, forgetfulness or neglect by patients in following di-

rections. Moreover, the action of each drug seems to enhance the effect of the others.

Table III shows a group of patients who had moderate to severe hypertension. These patients were studied over a period of three months. As with the original group, they were taken off all medication for a period of seven to ten days and were given a complete physical examination which included initial weight, urinalysis and blood studies, dark-room eyeground examination, pulse and blood pressures in the upright and supine position. They were seen at weekly intervals; at which time they were weighed, had their blood pressures taken and were questioned carefully as to side effects. While the obese patients were not placed on a strict (or low salt) diet they were cautioned to reduce their food and salt intake.

As shown by Table III, the response to Ismelin®, and Esidrix-K® with the newer and short term patients, has been excellent and no side effects developed.

Summary and Conclusions

Three groups of patients with hypertension were studied over a period of two years. As a basis for the diagnosis, we used as a starting point those with systolic pressures of 150/90. One group (Table I) of these patients had been treated mainly with Ser-Ap-Es® over a two year period. Table III lists new patients who were introduced to hypotensive drugs for the first time and who have been treated for a period of three months. This latter group were treated with Ismelin® and Esidrix-K®, and are still on this medication.

It has been found that Ismelin® and Esidrix-K® are the drugs of choice when severe cases of hypertension present themselves. With careful initial supervision, this combination of drugs works rapidly and provides exceptionally good antihypertensive results. Side effects have been unremarkable. The introduction of Esidrix-K® to the physicians' antihypertensive armamentarium has proven to be a well tolerated, effective adjunct to antihypertensive therapy.

For the mild to moderate hypertensive, we have given Ser-Ap-Es® over a long period of time with good effect. For those who watch their weight and physical activities, Ser-Ap-Es® can be used with simplicity and anti-hypertensive levels can easily be controlled without fear of side effects.

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Better Clinical Investigation

Certain things are clear. We need continuing research for newer and better drugs and for a greater understanding of the older ones. The needs are not only those of the scientific community, including the practicing physician, the pharmaceutical industry, or the Food and Drug Administration, but also those of the people served by these and other groups. It is clear that we must all work together for better clinical investigation. Not only are these groups involved, but the people of the country as well. Clearly, we are all in this together.

—Harry C. Shirkey, M. D. in *Southern Medical Bulletin*, December 1963.



Editorials

WARNING !

With the summer world travel season rapidly approaching, Dr. James G. Telfer, Chief of the Division of Foreign Quarantine, issued this timely warning today about immunizations for Americans planning foreign travel:

"If you are going abroad this summer, be vaccinated now against smallpox no matter where you are going, and against yellow fever and cholera if you will be traveling in countries where those diseases are present. And make sure you have your vaccinations recorded on an International Certificates of Vaccination document that you can present to public health officials abroad and when you return to the United States. To be valid for international travel, vaccination certificates must be validated with the stamp of your local health department or with some other stamp approved by the Public Health Service.

"Also, be sure that your immunizations against tetanus, diphtheria, and poliomyelitis are up to date.

"Immunization against typhoid and paratyphoid fevers is recommended for most foreign travel. In the event of an outbreak of influenza, typhus, or plague, vaccination is advisable.

"Remember: Travel abroad—including travel in the tropics—can be perfectly healthful and pleasant. The precautions recommended by the Public Health Service will help to make it so."

Highway Fatalities

Of all the grim records of violence and death down through mankind's long history, perhaps the strangest and most tragic is the story of the automobile and its annual army of victims.

Since the first horseless carriage chugged noisily down cobblestone streets, more than 60,000,000 Americans—killed, crippled and maimed—have inscribed their names on what has been aptly referred to as "the dishonor roll." By whatever name, the yearly casualty count continues its shameful, senseless growth.

Last year was no exception. In fact 1963 claimed the dubious distinction of being the worst single year in the history of highway safety. During its twelve months, automobile accidents were responsible for more deaths than the U. S. armed forces suffered in the entire Korean War.

According to an authoritative report by The Travelers Insurance Companies, the nation's traffic death toll surged to an all-time high as a total of 42,700 men, women and children died on our streets and highways. The annual country-wide survey based on information provided by state motor vehicle departments revealed that the 1963 carnage topped the figure of nearly 40,000 persons killed in 1941—a record high which stood for twenty years—and even surpassed the new record of 40,500 deaths established in 1962.

Incredibly, more persons have died on the highways than on our nation's battlefields; more have been injured in auto accidents than in all the world's wars combined.

This roll call of highway fatalities is no secret document hidden from the public gaze. In newspapers and bulletins, legal and police reports, in courtrooms and judges' chambers, the names on the dishonor roll and their innocent victims are made known to all. And not the names alone, but the catalogue of their deeds; driving while drunk, speeding, violating the rules of the road, failure to dim lights, driving on the wrong side of the road, etc.

These are a few of their offenses. In an endless roll call the names are read, and the judgments given. Then, all too often, the dishonored heedlessly proceed to emblazon their names again on the shameful record.

What is the solution to this national disgrace? Obviously, no one has found it to date. Statistics, pledges and slogans have seemingly had little effect on the American public. None of these have brought about lasting improvement in any segment of the basic problem. None of them have sparked that dead-serious personal commitment to greater care behind the wheel which is necessary if we are to reduce the spreading epidemic of traffic slaughter.

When will we succeed in bringing the scourge of needless casualties under some degree of control? Frankly, no one really knows the complete answer. . . .

Perhaps no significant improvement can be expected until the great majority of us learn to look upon the problem as a **personal** challenge rather than one which is primarily up to the other fellow!

Specific Gravity of Urine Called Simple Office Test of Kidney Function

Physicians may have a simple new method of testing kidney function in office patients merely by measuring urinary specific gravity during excretory urography, according to Dr. Sumner Marshall of the University of California School of Medicine.

He states in the *Journal of the American Medical Association* (187:333, Feb. 1, 1964) that a comparison of the specific gravity of

urine specimens gives radiologists an objective measure of kidney function. The specimens are obtained just prior to administering the contrast agent Hypaque[®] and prior to the post-voiding X-ray film. The information he gets in this manner makes it possible for the radiologist to interpret more accurately the excretory urogram, Dr. Marshall says.

He cites as the rationale for the new procedure the fact that urinary specific gravity is "considerably elevated for a prolonged period after administration of a contrast medium for excretory urography." The increase in specific gravity results from the concentration of contrast medium excreted in the urine.

To evaluate the procedure, Dr. Marshall gave Hypaque[®] (diatrizoate sodium) to 102 patients who were prepared for excretory urography with castor oil, enemas and by being deprived of fluids. Stressing the simplicity of the test from the standpoint of the practicing physician, he says the only requirements are a hydrometer and two specimen bottles. Accurate timing and volume determinations are called unnecessary.

On occasion, particularly in cases of poor opacification on X-ray films, radiologists are unable to interpret a urogram with confidence in order to make a diagnosis concerning kidney function.

"By using the measure of specific gravity in the urine in conjunction with the urogram, a more accurate interpretation of the urogram would be possible," Dr. Marshall concludes.

Physician Placement Service

Since the institution of a Physician Placement Service in 1954 by the Medical Association of the State of Alabama, this important phase of the Association's work has been under the purview of the Committee on Public Relations and is one of the most active and continuous programs that this committee has attempted.

The Physician Placement Service for the United States grew originally out of an en-

deavor on the part of the American Medical Association to meet the needs of medical officers returning from the armed services after World War II. It has now become a clearing house for communities, clinics, industries, and others seeking a physician and for physicians who are seeking a location in which to practice. Today the work of the Physician Placement Service is concerned with putting the physician in touch with communities and towns seeking the type of medical service that the physician has prepared himself to offer.

The activities and services of the Physician Placement Service are, in brief, as follows:

- Maintenance of a list of physicians seeking locations and classification of these by specialist rating, size of town or geographic location desired;

- Maintenance of a list of openings for physicians, with adequate data on each opening;

- Study of the openings and appraisals of need;

- Assistance to communities in developing ways and means of attracting qualified physicians;

- Methods of educating smaller communities to the necessity of investigating their needs and their ability to support a physician;

- Pointing out to these communities the steps they may take in securing a physician; and

- Suggesting how they may work toward keeping a doctor satisfied once he has been secured.

In keeping with these purposes and goals, the Physician Placement Service has established an effective information service and has collected pertinent data relating to medical facilities in the communities, medical personnel already situated in a given place, and the medical needs as projected into the future program of that community.

The problem of the ever existing need of more physicians can be shown more clearly in comparing Alabama's physician population with that of the nation's physician-population ratio. Alabama needs to have 72 doctors per 100,000 persons. Nationally, there are 132 doctors per 100,000 persons. At the present time we have only one doctor for 1,397 persons, while nationally one doctor serves about 761 persons. Among the states, we rank 4th from the bottom in this respect.

In Alabama, only one county has one doctor per 1,000 people. Thirty-nine counties have a ratio of one doctor to 2,000 people; and in 1/5 of the counties each doctor is responsible for more than 3,000 people. One county with a population of 10,000 has only one doctor there.

Currently, as of January 1964, there were 118 physicians listed with the Physician Placement Service who were seeking a location in our state; and there were approximately 75 towns and communities that were in need of more doctors. This figure increases daily as Alabama's economic picture improves. There has been, during the last five years, an average each year of from 48 to 56 towns that have secured a physician, and 28 to 42 doctors that have placed in Alabama. These figures represent the physicians and communities listed with the placement service. Some doctors settle in the state who have not sought active help, and likewise some of the communities that have attracted physicians to them have not been listed as seeking aid from the placement service.

In all instances, every effort is made to work with the community and the physician in order to provide direct and accurate information relative to any given placement. No attempt is made to "match" applicants with openings; rather the service is informational in nature, and any follow-up action is left to the physician and the community to initiate.

Report on School Traffic Safety Education Workshop

Governor's Safety Conference

April 29, 1964

The major area of school safety education considered by the Workshop has been in the area of driver education.

Our workshop was in unanimous agreement that an approved program of driver education meeting minimum national standards should be offered in every secondary school in Alabama.

There are three major problems involved, all of which are interrelated as viewed by the group. They are as follows:

1. Development of an awareness of the need for the approved national program of driver education on the part of all citizens of Alabama and organizations such as parents and teachers, students, school officials, legislators, youth groups, and all others interested in safety.
2. Provision for adequate teacher training programs in Alabama colleges and universities to insure competent teachers in sufficient numbers to teach driver education in the high schools.
3. To implement the basic goal of a standard national program of driver education in all Alabama high schools, a continuing source of revenue needs to be provided to finance the cost of offering this vital safety education for Alabama teen-agers.

Respectfully submitted,
Hayes L. Kennedy, Chairman
Dorsey Haynes
Paul Nickerson, M. D.
Sgt. John Henderson
Dr. D. P. Culp
John King
Melton Wallace

Letters to the Editor

I want to congratulate you upon the excellent cover which you have for the *Journal*. It is very dignified and instructive and catches the eye immediately.

H. Earle Conwell, M. D.
Birmingham, Alabama

Congratulations on your new Association *Journal* cover. It is another indication that the Medical Association of the State of Alabama remains a dynamic organization. This striking new cover, while retaining a certain dignity, is as crisp and fresh as Spring.

Peter T. Butler
Administrative Assistant
State Department of Public Health

AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY

Office of the Secretary: Clyde L. Randall, M.D., 100 Meadow Road, Buffalo 16, New York.

Applications for certification in the American Board of Obstetrics and Gynecology, letters requesting reopening of applications, and requests for re-examination are now being accepted in the office of the Secretary. All applications and letters of request must be submitted by July 1, 1964, and accompanied by duplicate lists of patients dismissed from service for the twelve months immediately preceding application.

Candidates are urged to carefully review the current Bulletin of the Board, with particular attention to the existing requirements before application is made.

Bulletins may be obtained by writing to the office of the Secretary.

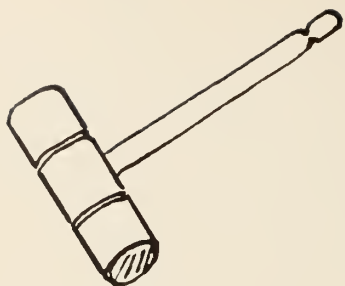
Diplomates are urged to keep the Board office informed of their current address.

MAY 23, 1964

Meeting of the Committee on Maternal Welfare of the American Society of Anesthesiologists.

Round-table discussion on obstetrical anesthesia and infant resuscitation—2:00 P. M. to 4:00 P. M.

Ann Jordan Farm, Kellyton, Alabama.
Interested physicians are invited to attend.



President's Page



It seems in order to begin the new year with some remarks regarding the need for revising the internal organization of the Medical Association of the State of Alabama.

The Medical Profession in Alabama and the people of the State as a whole have indeed been fortunate in having the doctors in charge of its Public Health affairs and responsible for the examination of new doctors who wish to practice in the State (Board of Medical Examiners).

A recent visit by the Ohio State Medical Association Executive Secretary, Mr. Charles Nelson, at the request of our Board of Censors confirmed this. When asked what he thought of the Medical Practice Act in Alabama, he stated—"You are famous for that." His State Association has no say-so in appointing the Board of Health.

In our internal organization we only have representation of the membership as a whole

on the numerous committees that are appointed and in the voting body which meets officially once a year. The Board of Censors is responsible for the operation of the Association when the Association is not in session. But the time required to attend to Public Health matters, and matters pertaining to the Board of Medical Examiners, has left this hard-working group very little time for the business of the Association.

The Medical Practice Act must not be altered nor should anyone suggest tampering with it. Within the frame-work of our own organization as it now stands, an administrative and quasi policy making body can be designated to handle the many details of a more complex operation than was existent even ten years ago as far as the affairs of the Association are concerned.

The elected officers of the Association should be members of such a body. The

President, President-Elect, the four Vice-Presidents, the Immediate Past President, and the Secretary-Treasurer, basically should constitute the nucleus of what we might call the Board of Trustees. The three delegates to the AMA have been included in the recommendation of the Constitution and By-Laws Committee. These are appointed by the President when the term of each expires. It is also recommended that one representative be elected from each of the eight Congressional Districts which will make this a nineteen-man Board.

It seems best that the Board of Censors decide what part of its duties it wishes such a group to take over. The Board of Censors will specify the extent of responsibility but, in turn, must give such a Board of Trustees authority to act and sufficient autonomy to avoid making it another "rubber stamp" that only "parrots" what it is told, and then goes home. This should be a working group and should have plenty to do.

The original duties of this Board may start with assumption of the functions of the Finance and the Annual Meeting Committees. Since both of these committees handle only affairs of the Association, it will not be difficult to evaluate how effectively such a group

of this type can operate. The coming year will be the first time the Association will be totally responsible for the annual meeting. Such a Board, by knowing first-hand what the financial situation is, can readily advise the Executive Secretary and his staff the proper procedures to follow in setting up the meeting for 1965.

It is conceived that eventually all standing and special committees will report to this Board. The membership on the committees can be reduced and, thus, can act more efficiently, at a reduced cost to the Association. This Board will have a definite responsibility for the financial affairs of the Association since it will be dealing directly with the Executive Secretary and the functions of his office. The direction of the Secretary-Treasurer can be made more specific by his being made a constant member of this Board. The continuity obtained by his presence on the Board will be invaluable in advising the Board concerning its operation.

This year bids to be a successful one, and one of action. By constituting such a Board of Trustees it will no longer be said that "there is too much power in the hands of too few people."

E. B. Glenn, M. D.



around the state

Candid Camera ANNUAL SESSION 1964



Above—Dr. and Mrs. J. G. Daves, Cullman, at the President's Ball.

Below—Dr. Emmett Carmichael, Assistant Dean, Medical College of Alabama, and members of the Medical College Alumni.



Dr. E. B. Glenn, President, Medical Association of the State of Alabama, surrounded by a group of distinguished physicians.



Dr. F. J. L. Blasingame, Executive Vice-President, American Medical Association, and Mrs. Paul Gray, President, Southern Medical Auxiliary.





Dr. E. C. Whitley
Decatur



Golf Tournament Chairman
Dr. John S. Yow, Montgomery



Dr. H. J. Till
Montgomery

Dr. Lewis M. Lamberth of Alexander City practically swept the field during the annual golf tournament held during Annual Session. Dr. Lamberth was one of the team winning the James Roscoe Shamblin Golf Trophy for Tallapoosa County. Other members of the team were Dr. James H. Harrison and Dr. Harold U. Dark, also of Alexander City.

Dr. Lamberth won the prize for low gross score, the low handicap net, and for driving closest to the designated hole.

Longest drive for the tournament was won by Dr. Claiborne Blanton, Jr. of Selma.

Your Candid Camera could not get pictures of all participants, but managed to catch the early birds shown on this page.



Dr. Grover C. Murchison
Montgomery



Dr. Walter Till
Prattville



40th
ANNUAL CONVENTION
WOMAN'S AUXILIARY
TO THE
MEDICAL ASSOCIATION
OF THE
STATE OF ALABAMA
1964



Harry C. Shirkey, M. D.

Harry C. Shirkey, M. D., of Birmingham, has been reappointed a member of the Council on Drugs of the American Medical Association.

Dr. Shirkey's reappointment was announced by Dr. Percy E. Hopkins, chairman of the AMA's Board of Trustees.

The AMA Council, composed of 13 medical experts appointed by the Board of Trustees, provides authoritative and unbiased information on drugs to the medical profession to encourage rational therapy. The Council, assisted by staff members and consultants, evaluates available evidence on the action, uses, dosage, hazards and other pertinent properties of drugs. This information is first reported in *The Journal of the AMA* and later, in the annual publication *New and Nonofficial Drugs*.

Another important function of the Council is the establishment of a Registry on Adverse Reactions. Periodic reports by the Council alert the medical profession regarding the safety of drugs and commonly used chemicals. The Council also co-operates with the United States Pharmacopeial Convention and The American Pharmaceutical Association in adopting nonproprietary names for drugs. Liaison is maintained with the World Health Organization in the attempt to adopt common international nonproprietary names.

William G. Thuss, Sr., M. D.

William G. Thuss, Sr., M. D., Birmingham, has been appointed a member of the Council on Occupational Health of the American Medical Association.

Dr. Thuss' appointment was announced by Dr. Percy E. Hopkins, chairman of the AMA's Board of Trustees.

The AMA Council on Occupational Health produces and distributes more than 60 publications for physicians, nurses and others on such subjects as: workmen's compensation;

survey of hazards in the working environment; pre-placement and periodic physical examinations; rehabilitation; employment of the handicapped; industrial nursing; disability evaluation; absenteeism; radiation in industry; safety programs; small plant occupational health programs; industrial dermatoses. The Council also conducts the annual congress on occupational health.

ACOG Releases Names of New Fellows

The American College of Obstetricians and Gynecologists today released the names of 649 new Fellows and five Associate Fellows who will be inducted into the College at the Twelfth Annual Clinical Meeting May 17-22, 1964, at the Americana Hotel, Bal Harbour, Florida. This brings the College roster to a total of nearly 8,800 including Life, Associate, and Junior Fellows from all sections of the United States and Canada.

To become a Fellow of ACOG one must be a physician who has completed an approved program of medical training, limited his practice completely to obstetrics and gynecology for at least five years, and have the unqualified professional approval of his colleagues. An Associate Fellow is anyone who has given valuable service in any of the fields allied to obstetrics-gynecology and who is qualified to assist the College in the accomplishment of its (educational) purposes.

The American College of Obstetricians and Gynecologists is an educational and scientific organization for physicians who specialize completely in the particular problems and functions of woman's reproductive system.

The following is a list of new Fellows from Alabama: Dr. Leland C. Gravlee, Jr., Dr. Gene W. Gray, and Dr. Robert C. Stewart, all of Birmingham; Dr. Thomas J. Burnett, Dr. Mattie I. Hyde, and Dr. Selden H. Stephens, Jr., all of Mobile; Dr. Herman V. Hassell, Montgomery; and Dr. Donal E. Barlow, Sylacauga.



ORGANIZATION SECTION



DR. E. B. GLENN

President, Medical Association of the State of Alabama

Dr. Eugene B. Glenn of Birmingham was elevated to the presidency of the Medical Association of the State of Alabama at the close of the Association's 103rd Annual Session at the Jefferson Davis Hotel.

Dr. Glenn was born in Asheville, North Carolina, and attended the local schools there. He was graduated from the University of North Carolina with an A. B. degree in 1927, and received his M. D. degree from Jefferson Medical College in Philadelphia, Pennsylvania.

Entering the service during World War II as a First Lieutenant, Dr. Glenn received three battle stars and became a full Colonel in 1955. He is at present Commanding Officer, 3345 U. S. Army Hospital Reserve.

Dr. Glenn is Assistant Professor of Surgery, Medical College of Alabama and Director of Medical Education at St. Vincent's Hospital in Birmingham. He is on the staff of St. Vincent's Hospital, University Hospital, Children's Hospital, and South Highland Infirmary.

Dr. E. B. Glenn is one of two physicians ever to serve twice as president of the Jefferson County Medical Society. Under his leadership the Jefferson County Medical Society established its first full-time public service office and while he was chairman of the building committee, built a headquarters building in 1960. He is a member of the Board of Trustees of the Medical Society and has served on many committees.

During the time Dr. Glenn served on the public relations committee of the Medical Association of the State of Alabama, 1959 and 1960, the annual Douglas L. Cannon Medical Reporter award was conceived. He served on the MASA legislative committee in 1961 and as chairman in 1962-63.

Dr. Eugene B. Glenn is a member of the Jefferson County Medical Society, the Medical Association of the State of Alabama, The American Medical Association, a fellow of

the American College of Surgeons, member of the Birmingham Surgical Society, Birmingham Academy of Medicine and a member of the American Red Cross, Birmingham Chapter.

Dr. Glenn and the former Grace Mason were married in 1934. They have two children, a daughter, Mrs. Grace L. Barrington, Wilmington, Delaware, and a son, Eugene B. Glenn, Jr.

AN AUTOBIOGRAPHY

by Frances Clemmons

President, Woman's Auxiliary to the
Medical Association of the State of
Alabama



It always hurts to admit that we are not natives but were born in Kansas. We have been in Alabama since 1942 except for time spent in the Navy during World War II. As a naturalized citizen of Alabama, I do enjoy telling visitors to our state that our friends love it here but they don't know any better. We have lived in Kansas, Missouri, Chicago, New Orleans, New York, and Florida. We are here out of choice but the natives are here by accident of birth.

Lowell and I met at the University of Kansas and married in 1938 while both of us were

still in school. We have five children, Philip, Terry, Linda, Jane, Hank, plus two, Philip's wife Patsy, and our granddaughter, Nancy.

For many years the family's main hobby has been show horses, both Tennessee Walking Horses and American Saddlebred Horses. Our newest hobby is flying. Lowell bought me an airplane so I could fly to Auxiliary meetings.

My hobbies are Lowell, my husband, the children, the church, Presbyterian, the Medical Auxiliary, flying, fishing, horses, and bridge in just about that order.



Alabama Department of Public Health



Survey of Ionizing Radiation Sources

William T. Willis, Director

Division of Radiological Health

From the first crude radiographs made of bones in the human hand to the modern techniques utilizing fluoroscopic and roentgenographic methods, X-rays have served as a useful diagnostic aid to the medical profession. However, this wonderful instrument is not a panacea. Early efforts in analyzing the effects of X-rays on the human system were hampered by a lack of instrumentation with which to measure the quantity of radiation being received by the patient. As knowledge was accumulated about the effects of X-rays on the human system, guidelines were formulated. These guidelines indicated that the dose applied to the human system should be held to as small a quantity as practical to achieve the medical requirements for diagnosis.

A program was initiated by the Bureau of Dental Hygiene, Alabama Department of Public Health, in 1958 for the reduction of exposure to radiation from dental X-ray units to the general public and dental personnel. This reduction was to be accomplished by installing adequate filters and collimators to X-ray units in dental offices

throughout the state on a mail order basis. This program resulted in filters and collimators being sent to 611 Alabama dentists.

The second phase of the program was a four-hour course in dental radiological health conducted by the Bureau of Dental Hygiene in co-operation with the United States Public Health Service. This course was developed to provide dentists with additional training in the basic principles of reducing exposure to patients and operators during normal dental radiographic procedures. A total of 327 dentists attended the course.

In March, 1961, the University of Alabama School of Dentistry entered into an agreement with the Alabama Department of Public Health and the United States Public Health Service to evaluate conditions within the dental offices in Jefferson County. This dental survey included the installation of adequate filters and collimators in all dental X-ray units within Jefferson County.

Organized in January, 1963, the Division of Radiological Health of the Alabama Department of Public Health directed its first year's

activities toward organizing a radiological health program. This division in co-operation with the Bureau of Dental Hygiene made plans for a physical survey of all dental X-ray units within the state. To obtain the co-operation of the dental profession in this voluntary program, the directors of the Bureau of Dental Hygiene and the Division of Radiological Health outlined the objectives of the program at regional meetings of the dental society. They requested the co-operation of the dentists and answered questions about the radiological program. In every case the dentists were most receptive to the proposed program.

Recruiting trained personnel was a major problem in organizing the survey. The University of Alabama School of Dentistry contracted to provide 30 hours of classroom instruction and practical training in X-ray techniques for six dental students who would make the physical survey of the dental units. This training included the use of measuring instruments, the installation of filters and collimators in X-ray units, and the proper coding instructions for recording the results of the measurements obtained in the survey.

The primary objective of this program was to bring dental X-ray units in the state into compliance with the recommendations of the American Academy of Oral Roentgenology regarding filtration and collimation. Other objectives were to obtain data on various techniques being used in dental offices of the state and to obtain a total number of dental X-ray exposures being made within the state.

To bring dental X-ray units into compliance with the recommendations of the American Academy of Oral Roentgenology, two-man teams surveyed dental units in the state. They first measured the beam size of the unit before any correction had been made. The total filtration of the machine was then determined. The dentists were advised if the diameter noted was greater and the filtration less than the recommended standards. The survey team then asked the dentist to allow them to install the necessary filtration and

collimation to bring the unit into compliance with recommendations of the American Academy of Oral Roentgenology.

Prior to the installation of additional filtration the roentgen output of the primary beam was determined and recorded. The roentgen output was again measured after the installation of additional filtration. When the proper collimation had been inserted in the unit, the measurement of the field diameter was repeated to test if the proper collimator had been installed. Measurements of the amount of scatter radiation were made at points where the dentist usually stood when making X-ray exposures. The survey team suggested alternate places where the dentist might stand to reduce his exposure to radiation. Scatter radiation exposure in the suggested locations was measured to demonstrate the reduced exposure to the dentist. If the cord on the X-ray machine was long enough, it was usually recommended that the dentist stand outside the room while the X-ray exposure was being made.

Other information obtained from the dentist included the estimated number of films exposed each week, the average exposure time per film, the type of film used, the type of developer used, and the time of development for the film.

During this survey a total of 677 dental X-ray units were checked. Of this number 242 of the units needed filtration, 16 units needed collimation, and 113 units needed both filtration and collimation. A total of 306 units needed no corrections to comply with the standards recommended by the American Academy of Oral Roentgenology. These figures indicate that 54.8 per cent of the units surveyed needed some correction in order to bring them into compliance with the recommendations. The units in Jefferson County were not included in this survey since they had been surveyed and corrected during the summer of 1961.

The magnitude of the problem of exposure to the general population from dental X-ray

DEPARTMENT OF HEALTH

exposures in the state can be judged from the estimated work load which was recorded during the survey. This data revealed that an estimated 2,340,000 dental X-ray exposures are made each year within the state. This approximates the estimated national average of one exposure for every person in the United States each year.

With the installation of adequate filtration and collimation in dental units, it is felt that the largest single measure to accomplish a reduction in the exposure to the general population from dental X-ray exposures has been accomplished. Further reduction in exposure to ionizing radiation in dental offices can be accomplished by a change to high-speed film and the use of a time temperature development technique for developing the film. The data collected during the survey indicate that 22 Alabama dentists are using a slow-speed regular film, 464 dentists are using an intermediate-speed film, 99 dentists are using extra-fast film, and 345 dentists are using ultra-fast film. The new high-speed film available on the market today can further reduce the exposure of the dental patient if the dentist will adjust his techniques to utilize the benefits to be obtained from this new film.

The dental profession has taken the lead in reducing ionizing radiation exposure to their patients. They are to be commended for their co-operation and interest in this program.

Similar programs to reduce excessive ionizing radiation to patients, operators and the general public will require the co-operation of other professional groups within the state. At the present time each licensed member of the healing arts has been requested to register all sources of ionizing radiation in his office or clinic. This voluntary registration of ionizing radiation sources is considered to be the next step in the active program provided by the Alabama Department of Public Health, which is the official radiation control authority for Alabama.

BUREAU OF LABORATORIES

Thomas S. Hosty, Ph.D., Director

March 1964

Examinations for intestinal parasites	1,157
Typhoid cultures (feces, urine and other)	227
Brucella cultures	1
Examinations for malaria	4
Examinations for gonococci	1,722
Serologic tests for syphilis (blood and spinal fluid)	24,042
Darkfield examinations	4
Agglutination tests	1
Examinations for diphtheria bacilli and Vincent's	50
Complement fixation tests	30
Examinations for Negri bodies (smears and animal inoculations)	263
Water examinations	2,213
Milk and dairy products examinations	3,595
Examinations for tubercle bacilli	4,208
Miscellaneous examinations	4,355
Total	41,872

BUREAU OF PREVENTABLE DISEASES

W. H. Y. Smith, M. D., Director

CURRENT MORBIDITY STATISTICS

1964

	Feb.	Mar.	*E. E. Mar.
Tuberculosis	133	90	160
Syphilis	112	125	132
Gonorrhea	316	280	301
Chancroid	3	0	3
Typhoid fever	1	0	1
Undulant fever	1	1	0
Amebic dysentery	2	5	4
Scarlet fever & strep. throat	137	89	271
Diphtheria	0	2	2
Whooping cough	4	15	20
Meningitis	6	7	9
Tularemia	1	0	1
Tetanus	1	0	1
Poliomyelitis	0	0	0
Encephalitis	0	0	1
Smallpox	0	0	0
Measles	116	225	628
Chickenpox	111	106	346
Mumps	80	126	189
Infectious hepatitis	34	44	32
Typhus fever	0	0	0
Malaria	0	0	0
Cancer	999	413	599
Pellagra	0	0	0
Rheumatic fever	17	28	17
Rheumatic heart	51	24	31
Influenza	280	135	889
Pneumonia	333	285	278
Rabies—Human cases	0	0	0
Pos. animal heads	0	1	0

As reported by physicians and including deaths not reported as cases.

*E. E.—The estimated expectancy represents the median incidence of the past nine years.

The Woman's Auxiliary



Hi!

Some of you have been reading those letters in the Alabama General Practitioner that Lowell, my husband, and George Newburn, Dot's husband, have been writing to each other about a meeting in Mobile. Now you have one from me about how much fun it is to go to Auxiliary meetings.

Right now, I'm trying to count up how many members we have and the numbers don't balance any better than the ones in my checkbook. There is always this business of packing to go to Montgomery next week, and, of course, I'll have to wait until next month to tell you about the hats the girls wore to the Auxiliary meetings. For years Lowell, my husband, has always liked for me to attend all Auxiliary meetings because it keeps me out of the stores. You have just enough time left to get the presents for the children before you come home.

You know Lowell likes the Auxiliary. He says it is the only place he has absolute control over my actions. Of course, we only do those jobs that you tell us to do, and we try to do them just like you want them done. If your wife doesn't belong, you're missing a good bet because we're really old-fashioned, and practice that "obey" in all of our projects.

Seriously, we doctors' wives, who are Auxiliary members, have the feeling that we are your second line of defense for better public relations for the entire profession. In this particular area we gladly accept a back seat to you. I will not bore you with statistics but I am particularly proud of our work in legislation, collecting funds for A. M. A. E. R. F., and recruiting young people to work in the careers connected with medicine. We have had a new project this past year called International Health. Many of us went down to our husbands' offices and collected all the drug samples you didn't give the family or your patients and sent them to Detroit to be distributed overseas in under-developed countries.

If your wife runs a taxicab, wipes noses, runs the P.-T. A., helps the preacher run the church, and belongs to the Medical Auxiliary, give her a pat on the back and tell her you love her. She'll work twice as hard next year. If she does all these things but doesn't belong to the Medical Auxiliary, we need her. Write to Mrs. James F. Crenshaw, 3215 Sterling Road, Birmingham, Alabama, and Eloise will join her up.

Just remember, we will continue trying to do a little more than you want us to.

Frances Clemmons, wife of
Lowell Clemmons

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In Acute Renal Failure:

Peritoneal Dialysis As A Method Of Management

Z. B. Barnes, M. D., F. A. C. S.

Montgomery, Alabama

Acute renal failure is a potentially disastrous complication of shock, trauma, transfusion reactions, major surgery, burns and sepsis. Fortunately, the lesion of lower nephron nephrosis completely and spontaneously heals in many of these cases. If patients with acute renal failure are carefully managed until the kidneys recover from injury, many can be salvaged. Management includes the widely accepted measures of restriction of fluid, electrolytes and nitrogenous substances; hemodialysis; peritoneal dialysis; and gastro-intestinal extraction of potassium and water, using exchange resins. The extreme catabolic response of the patient with acute renal failure who has been subjected to severe trauma or extensive surgery will usually require the institution of some type of dialysis.

Peritoneal dialysis has recently gained popularity because of its simplicity and effectiveness. Dr. Merrill¹ and associates at the Peter Bent Brigham Hospital, Boston,

Massachusetts, who have had wide experience with both hemodialysis and peritoneal dialysis, have found that in most cases peritoneal dialysis can be substituted for hemodialysis and is their method of choice. Maxwell² and Doolan³ have also reached similar conclusions. It is not the purpose of this paper to de-emphasize the effectiveness and role of hemodialysis in the treatment of renal failure, but rather to point out that peritoneal dialysis is often just as effective, simple to employ, and offers in contrast to the artificial kidney many advantages to the private practitioner and those not closely associated with a large teaching institution.

Historically, the technique of peritoneal dialysis was first used to treat uremia in man about 40 years ago.⁴ Early complications of overhydration, infection, inadequacy of the catheters used, and difficulty in recovering the irrigating fluid prevented its use as a routine procedure. Grollman⁵ revived interest in peritoneal dialysis in 1951, and his basic

technique has proven to be sound. However, until the recent development of more refined catheters and commercially prepared dialyzing fluid, peritoneal dialysis remained a rather clumsy method of treating renal failure.

The technique of peritoneal dialysis basically involves the insertion of a specially prepared plastic catheter into the peritoneal cavity and periodically introducing and recovering a commercially prepared glucose-electrolyte solution, which is available through at least three drug companies (Abbott Laboratories as Inpersol,[®] Baxter Laboratories as Dianeal,[®] Cutter Laboratories as Peridial[®]). The only equipment necessary consists of a sterile paracentesis tray containing a No. 17 trochar, scalpel blade, syringe and needles for local anesthesia, and non-absorbable suture materials. The bladder having been emptied, the trochar is introduced in the midline just below the umbilicus after infiltrating with local anesthesia; and the catheter is inserted through the trochar into the peritoneal cavity and directed downward into the pelvis. Scars and adhesions from previous abdominal surgery will occasionally necessitate insertion of the catheter through another site, preferably the right or left lower quadrant; but the site of introduction is unimportant as long as the epigastric vessels and adherent viscera from previous surgery are avoided. It is important that the multiperforated distal portion of the catheter be within the peritoneal cavity in order to avoid infusing the preperitoneal space and abdominal wall. This procedure can be easily performed in the patient's bed. Rarely, because of old adhesions, it might be necessary as a safety factor to insert the catheter into the peritoneum under direct vision through a small incision using local anesthesia in the operating room. After placing the catheter and withdrawing the trochar over the catheter, the skin is sutured around the catheter tight enough to effect a watertight closure. Sterile tubing, which accompanies the commercially prepared dialysate, is then connected to the catheter and 400 to 500cc. of dialysate is rapidly infused. If there

is any difficulty with inflow, the catheter is re-positioned until this is satisfactory. The bottle is then reversed and placed on the floor; and a full, rapid gravity outflow of fluid is ascertained. A sterile dressing is then placed around the catheter and dialysis begun.

The commercially available solutions for dialysis are virtually identical in composition containing sodium, 140 mEq. per liter; no potassium; chloride, 101 mEq. per liter; magnesium, 1.5 mEq. per liter; and lactate, 44.5 mEq. per liter. The pH is about 5.7, and the solution is packaged in one liter bottles. Each manufacturer provides this solution in two osmotic strengths, 1.5 per cent glucose and seven per cent glucose.

Unless it is desirable to rapidly dehydrate the patient, the 1.5 per cent glucose solution should be used. In adults, 2,000cc. is rapidly infused. Since the removal of potassium and urea is usually the most important step in treating acute renal failure, the solution is allowed to remain in the peritoneal cavity for one hour to permit maximum dialysis. If the primary problem is removal of excess body fluid, 30 minutes is satisfactory. The fluid is then collected by gravity drainage, placing the bottles on the floor at the bedside; and this usually requires 15 to 30 minutes. The cycle is then repeated again and again under supervision of a nurse. Careful intake and output records are kept. It is advisable to add 100 mgm. of Achromycin,[®] or some other suitable antibiotic, to the dialysate to minimize the danger of peritoneal infection; and new sterile tubing is used with each dialysis. The dialysis is usually continuously performed for 24 to 36 hours, this being equal to six hours of hemodialysis. At this time blood electrolyte determinations are rechecked, the patient re-evaluated, and a decision made as to the need for further dialysis. The catheter may be left in place indefinitely and again used even days later.

When using the 1.5 per cent glucose solution, one can expect to recover 100-200cc. of excess fluid with each exchange. When the seven per cent glucose is used, and this is not

usually necessary, 500-700cc. of excess fluid per exchange may be recovered; and care must be taken not to precipitate hypovolemic shock, which can result from rapid removal of water from the intravascular compartment.

If the serum potassium is normal, although this is not usually the case in acute renal failure, 4 mEq. of potassium chloride may be added to each liter of fluid. If desired, heparin (1,000 units) may be added to each exchange to prevent fibrin clot formation in the catheter. It is desirable to warm the dialysate to near body temperature for the patient's comfort and to avoid lowering body temperature.

Dialysis is indicated in any case of acute renal failure that persists more than a very few days. Merrill¹ has recommended institution of peritoneal dialysis before the patient develops the uremic syndrome. In patients who have sustained extensive trauma or surgery, there is a marked catabolic response with rapid rise of the BUN and serum potassium. These patients should be promptly and vigorously dialyzed and such treatment continued for as many days as necessary. When renal failure is due to transfusion reaction, dialysis of six hours daily may suffice.

There are no absolute contra-indications to the use of peritoneal dialysis. Localized infection could conceivably be spread, but in such cases the potential harm would be weighed against the advantages of dialysis. Recent abdominal surgery is no contra-indication. No harmful effects have been noted to follow dialysis of the postoperative abdomen. Extensive adhesions make placement of the catheter difficult and might interfere with the procedure. Pain has not been a significant problem.

When compared to hemodialysis, peritoneal dialysis has many advantages. It can be rapidly instituted in the patient's own bed, special equipment and personnel are not required, it can be almost indefinitely continued and repeated without cannulating arteries and veins, and the cost is quite reasonable. One liter of dialysate costs about

the same as a liter of five per cent glucose DW.

Complications of peritoneal dialysis are few and for the most part avoidable. Peritonitis rarely occurs. The addition of antibiotics to the fluid and use of sterile tubing with each exchange minimize the danger of this possibility. Puncture of the bowel or other viscera with the trochar is an avoidable complication. The most frequently encountered problem is that of maintaining satisfactory flow through the catheter. Recently improved catheters have largely overcome this difficulty. If the catheter becomes occluded, another may be readily re-inserted through the same incision or at another site. Occasionally some bleeding follows introduction of the trochar, and the recovered fluid may be blood tinged. This has not been a significant problem. Leakage of fluid around the catheter may occur if the multiperforated tip is not completely within the peritoneal cavity, or if the skin is not snugly sutured around the catheter.

The following case is reported as an example of use of peritoneal dialysis in acute renal failure due to trauma and intra-abdominal hemorrhage.

CASE REPORT

G. K., age 48, was admitted to the Jackson Hospital, Montgomery, Alabama, on July 12, 1963 from Elmore County Hospital, having sustained injuries in an automobile accident approximately two hours prior to admission. Initially on examination at the Elmore County Hospital, the patient was in profound shock with unobtainable blood pressure. He was given a vasopressor and 500 cc. of blood and transferred to the Jackson Hospital. On admission, physical examination revealed a blood pressure of 90/50; pulse, 120. There was marked pallor, the abdomen was distended, and rigid and silent. There were contusions of the right flank, right anterior abdomen and lower chest. A Foley catheter, which had been placed in the bladder con-

tained no urine. Laboratory studies on admission revealed Hemoglobin 16.5 gm.; WBC, 37,300 with 85 per cent polys; and hematocrit, 48 per cent. There was no urine available for urinalysis. 500cc. of blood was given and after the admission laboratory work, including cross-matching of blood, had been done, he was taken to surgery and laparotomy performed through a long midline incision. A large amount of blood was present in the peritoneal cavity, and exploration disclosed a laceration of the liver through the gallbladder bed and complete avulsion of the gallbladder from its bed, and avulsion of the cystic artery from the hepatic artery. The side of the hepatic artery was sutured with complete control of the hemorrhage and the gallbladder removed, it being only necessary to divide and ligate the cystic duct. The common duct was intact, but there was hematoma and contusion surrounding the head of the pancreas. At one time during the operation, blood pressure was unobtainable because of profuse hemorrhage at the site of the injury, but by clamping the hepatic artery with the fingers and rapidly transfusing blood; blood pressure was restored.

Following the surgery, urinary output was 165cc. during the first 24 hours, and for the next four days it measured less than 200cc. per 24 hours. During this interval fluid intake was carefully controlled so that only Levine tube drainage and estimated insensible body loss of water was replaced, this amounting to approximately 1,500cc. daily. Blood chemistries were carefully followed and these showed a gradual rise of the BUN from 26.5 on the day following surgery to 135 four days later. During this time the serum potassium became elevated to 6.6 mEq. per liter; and the CO_2 fell to less than 5 mEq. Despite supportive measures and careful fluid restriction, the patient's condition became critical because of electrolyte imbalance. He became disoriented and semi-comatose, developed gastro-intestinal bleeding manifested by hematemesis and melena. On the sixth postoperative day, peritoneal lavage was instituted despite abdominal distention and was continued for approximately 36 hours.

Within 12 hours after beginning dialysis, the serum potassium had fallen to 4.6 mEq., the BUN to 115, and the CO_2 was 12 mEq. Following the institution of peritoneal lavage, improvement was dramatic in all respects, and there is no question but what this procedure was life saving. Urinary output began to increase on the eighth postoperative day, and the BUN and CO_2 gradually returned to within normal limits.

The patient made an uneventful recovery and was discharged from the hospital on August 2, 1963, 21 days after admission. At this time urinalysis was within normal limits, as were the blood chemistries. The patient has returned to work and remains asymptomatic today.

SUMMARY

The technique and advantages of peritoneal dialysis as a method of treating acute renal failure have been described and an illustrative case has been briefly presented. Because of its simplicity and effectiveness, this method of treating acute renal failure is very helpful to the surgeon, particularly where there is not a well-trained artificial kidney team immediately available.

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Facial Bone Fractures

GEORGE F. CRIKELAIR, M. D.

In the multiply injured patient, facial injuries must be put in their proper perspective.

Although esthetically unpleasant and occasionally complex in its ultimate solution, the face injury, regardless of its severity, is practically never life-endangering except for a war-type injury where there may be respiratory obstruction and severe bleeding. These are rare situations in civilian facial injuries; bleeding can usually be controlled by an external pressure dressing or cavity packing, and an airway can be maintained by some type of tongue support; rarely an emergency tracheostomy is needed.

Dr. Crikelair is Director, Plastic Surgery Service, College of Physicians and Surgeons, Columbia University, New York, New York.

This manuscript was presented at the University of Alabama in January, 1964 on invitation from the surgical department under the auspices of the MEND (Medical Education for National Defense) program.

The evaluation of injuries to the brain precede the facial injury in importance as do injuries to the chest, abdomen and, often-times, even the extremities if there is a compound fracture.

Following World War II and the Korean episode, we saw many men with severe facial injuries which were not treated in P. O. W. camps and only months or years later were operated upon for esthetic or functional improvement.

Principle I: The diagnosis and treatment of other life endangering injuries take precedence over facial injuries except for rare instances of hemorrhage or respiratory obstruction.

In our discussion today, we will by-pass eye injuries completely, nod gently at facial burns, dwell shortly on soft tissue injuries and spend the bulk of our time on facial bone fractures.

Facial burns in their management, except for later facial reconstruction, do not differ

from burns of other areas of the body. They are perhaps best left exposed without dressings. Except for the possibility of respiratory obstruction secondary to massive edema, the face burn may fare better than other areas of the body—the hair follicles are often in the subcutaneous tissue rather than in the dermis and frequently what we initially think is 3° turns out to be 2° because of the depth of the surviving secondary skin appendages.

Soft tissue injuries of the face: We have all been taught the fundamentals of management of such injuries, but it is well to review these occasionally. 1) Remove only tissue which is obviously devitalized. 2) Clean and irrigate all wounds to remove dirt and foreign bodies using a stiff nylon or wire brush under adequate anesthesia to remove small "ground-in" particles which are often seen in face injuries. If not removed initially, the removal of these traumatic tattoos is as difficult after the face heals as is the removal of a tattoo inflicted on a chest at a tattoo parlor. 3) Do not shave eyebrows or hair where by doing so you may destroy anatomical landmarks so essential to realigning the face structures properly. Don't confine yourself by operating through a hole in a towel. We often prep the face and scalp and operate on the face leaving the entire head exposed. Scalp and facial hair can easily be cleaned; viewing the entire head gives less chance for anatomical malalignment. 4) Facial nerve lacerations, parotid gland and duct lacerations can be suspected on a basis of the location and depth of the laceration. Like all other pieces of cut anatomy, they should be reapproximated, if possible. If they cannot be conveniently located and repaired, a drain in the wound will help the parotid problems and the cut nerve can possibly be fixed at a later date. 5) The face fortunately is rich in blood supply and so withstands trauma and surgery very well. The aim in any soft tissue facial injury is to help this healing process and not hinder it. Proper anatomical alignment is essential.

If there is tissue missing, the type of immediate repair will depend on several factors:

- a) The patient's condition.
- b) The surgeon's condition (A and B are important since complicated surgical maneuvers may take several hours).
- c) Techniques of repair known to the surgeon.
- d) Condition of the tissues.

One can seldom err in using a split-thickness skin graft for the traumatically absent facial skin. Such a graft is easy to obtain; gives rapid healing; may be the method of choice; can always be removed later if necessary.

It is still good technique on a thru and thru cheek or nose injury with loss of tissue, to suture skin to mucous membrane and to do secondary reconstructive surgery later.

Principle II: Closure of lacerations and resurfacing of the face should be done shortly after injury even if these are face fractures to be treated at a later time. 6) The type, size, and method of using the suture for soft tissue facial repair are all like a camera—the goodness of the picture is not as dependent on the camera as it is the person taking the picture. We all have a tendency to evaluate the result of repair of soft tissue injuries of the face too rapidly. It may take months for the scars to settle; until they are white and without surrounding induration, a final statement of outcome cannot be made. I fear many people are re-operated too rapidly—tincture of time is wonderful. It may be hard for both doctor and patient to be patient during the settling process—makeup over these scars may help this passing time appreciably.

Facial fractures—There is no rush about repairing facial bone fractures. The bones will not fix for several weeks. Reduction and realignment can be done either immediately after a fracture or anytime before the bones are fixed. Realignment may be difficult through a massively edematous face, so we try for either immediate treatment or treatment after most edema has subsided. If there are other bodily injuries which are severe enough to take precedence in therapy over

compound facial fractures, the soft tissues of the face should be repaired immediately. Ten to 14 days later, these sutured lacerations can be reopened if open reduction of the fractures is necessary. The extent of the fractures and the patient's condition will decide the time to reduce facial fractures, remembering that reducing and fixing of complicated fractures may require several hours of operating time.

The diagnosis of facial fracture is made a) from the history of the force and direction of the blow; b) the physical examination; simple observation may not add a great deal but will tend only to localize the fractures; bimanual palpation, intra and extraoral, is of the greatest value in diagnosis; c) the X-ray findings.

The X-ray findings must be very clear to the operating surgeon. We prefer the stereo Water's view of the facial bones—using a skull and viewing the X-rays, the fractures can be outlined on the skull.

Blows severe enough to fracture facial bones, especially mid-face fractures may also damage the skull and brain or the cervical vertebrae. X-rays of the cervical spine are needed to rule out cervical spine fracture or dislocation and skull X-rays are needed to rule out skull fractures.

In most instances, general endotracheal anesthesia is required for reduction of facial fractures. It is good to outline the fractures for the anesthetist so he will not make them worse during anesthesia induction.

Occasionally, a tracheostomy is needed. Facial fractures seldom give rise to respiratory obstruction. There are two instances, however, where tracheostomy will be of help if there are severe facial fractures—1) brain damage with a long period of unconsciousness and 2) other injuries which will require repeated anesthetics. There is less damage to the face as anesthesia is given for reasons other than reduction of facial fractures.

The aim in treatment of facial fractures is a) to reduce the fractures. This sometimes takes considerable force; b) snap them back

in position so they will stay by themselves or c) if they will not stay in position, wire them in place to other intact facial or skull bones; d) if they are in good position, do nothing but guard against further injury.

Nasal fracture—The history of the injury, the appearance of a deformed nose and movable bones on palpation will establish the diagnosis. Immediately after an injury of sufficient force to fracture the bony nose, there is not too much swelling and there may be some anesthesia so all the above factors can be noted. However, the deformed appearance caused by misplaced bones may later become masked by edema which may also preclude manual palpation of the fragments.

Intranasal examination is essential. Tears in the mucous membrane can be seen as can displacement of the septum or any impingement on the airways.

Lateral soft tissue X-rays plus an intraoral occlusal film may or may not reveal the fracture of the bones. They will not show fractures or dislocations of the cartilages. Even if a fracture is noted, the X-ray never gives the true clinical picture of the deformity. This can only be determined by the clinical examination in the absence of massive edema.

Most nasal fractures can be reduced either under general or local anesthesia without open reduction. However, the surgeon must be prepared to do an open reduction or a modified rhinoplasty-like procedure if necessary.

Mandible—The history of the injury, trismus, localized pain and swelling, intra and extraoral inspection and palpation will help establish the diagnosis of a fracture of the mandible. The diagnosis must be confirmed by X-rays. It is advisable to get both lateral and AP views. The fractured segments may look in good position on the lateral view but be grossly malaligned in the AP view.

Having established the diagnosis, the treatment is as for any long bone of the extremity: reduce the fragments and hold them in po-

sition until they are healed—usually five to seven weeks. The aim in treatment of a fractured mandible is to have proper dental occlusion and the bony fragments of the mandible will fall into proper position.

If there are insufficient teeth, or after wiring, X-rays show the bony fragments still significantly displaced, we favor open reduction with direct wiring of the fragments. The open reduction should be done as an elective procedure. Occasionally, either with or without teeth present, external fixation of the mandible using a head cap, rubber bands and a chin sling is sufficient. Whatever method is used, positioning of the mandible should be rechecked occasionally by X-rays. Open reduction is not without troubles—if a tooth is in the fracture site or a detached piece of bone is wired in place, there may be non-union, a chronically draining wound, or osteomyelitis.

If the condyle or neck of the condyle is fractured, either no treatment or immobilization of the mandible with the teeth in occlusion for seven to ten days will suffice. Few patients will have late symptoms from this type of fracture. Pain or ankylosis occur infrequently and are relieved by later resection of the involved condyle.

Since the advent of the “blending machines,” dietary intake is no longer a problem for patients who have their jaws wired.

Malar Arch—When only the arch breaks, it fractures in three areas and depresses at the site of the middle fracture. It is caused by a direct blow of considerable force. Clinically all that can be seen is localized swelling which, when it subsides, leaves a localized depression. There may be trismus either because of the disturbance of the masseter muscle attachment and/or because of impingement on the temporo-mandibular joint. Although the stereo Water’s view will demonstrate this fracture, a vertical mental view is best.

Most malar arch fractures are easily reduced and will hold once pushed out either through a temporal or intraoral approach. If

not, a small Kirschner wire may help hold position.

Trimalar fracture—The malar bone articulates with the frontal, sphenoid, temporal, and maxillary bones. If fractured, it may be displaced downward, inward and back, or it may be rotated. Perhaps the most common clinical association with this fracture is diplopia because the floor of the orbit is broken and the eye can drop. In reality, diplopia is rarely seen initially because of the edema. Later, after edema subsides, it may become apparent. Its presence will depend on the damage to the orbital bony floor. Later there may be interference with the eye movement because of scarring. Since the floor of the orbit is also the roof of the antrum, it is possible that bone spicules could be displaced into the eye or periorbital structures.

Initially the patient usually has little discomfort. On inspection, a “black eye” may be all that is seen. There may be anesthesia along the distribution of the infraorbital nerve. If the bone is displaced, the lines of fracture can usually be palpated along the lateral orbital wall and the infraorbital rim. The fracture of the malar arch is often a greenstick type of fracture and therefore not palpable. The stereo Water’s X-ray will show the fracture lines and there will usually be clouding of the antrum.

There have been numerous procedures and approaches advocated for reducing this fracture. The choice of the procedure will be dictated by proper understanding of the fracture and its late complications. If the malar bone is displaced and rotated and the fracture is not reduced, there will be flattening of the malar area, a lowering of the eye with diplopia and there may be interference with the extra ocular movements.

If the bone is not displaced, the flattening will not occur but the ocular complications are still possible. Our treatment varies, therefore, not in kind but in extent. No operation is needed if the bone is not displaced. If ocular problems develop weeks later, only the orbital floor need be explored. If the

bone is displaced, as an elective procedure, under general endotracheal anesthesia, but occasionally under local anesthesia, an infraorbital incision is made. The infraorbital rim is exposed and the orbital contents are elevated from the bony orbital floor. A separate incision is made laterally over the second fracture line. Through these two incisions, the bone is reduced. Often it holds its position but if not, small holes are drilled in each fragment and using stainless steel wire, the fragments are held in proper position.

Fractures of the orbital floor can be seen as the orbital contents are elevated. If there are sufficient pieces of bone still attached to periosteum, they can be elevated through a Caldwell-Luc approach entering the antrum and packing it to elevate the floor of the orbit. Packing the antrum is also indicated to push out the anterior bony antral wall if it is comminuted. The packing is brought out the nose or mouth and is removed in ten to 14 days. This packing should be done with the orbital floor visualized so spicules are not pushed into the eye.

There is a fracture called a "blow out" fracture. In this fracture, due to a direct blow over the eye or the infraorbital rim, there results a fracture of the orbital floor with an intact infraorbital rim. There will be fluid in the antrum and possibly X-ray evidence of a fracture of the orbital floor. No immediate treatment is indicated in this fracture. If after a few weeks, there develops either fixation of the eye or double vision, the orbital floor should be explored and either a bone or cartilage graft inserted or the orbital floor can be packed into proper position through a Caldwell-Luc approach.

Mid-face fractures—The mid-face fracture has been called the "guest passenger injury" because of its frequent occurrence among people riding in the front seat of a car next to the driver. The fracture is caused by the sudden impact of the mid-face against a solid object such as the dashboard or the windshield. The term mid-face is a broad encompassing term usually referring to frac-

tures of the maxilla often compound and often associated with nasal fractures and fractures of the tri-malar variety, unilateral or bilateral.

Because of the force of the blow, there often is associated brain damage and sometimes injury to the cervical spine. Obviously, any problems which may endanger survival take first precedence in therapy. An adequate airway, evaluation, and treatment of intracranial problems, general supportive measures, and possible injuries to other parts of the body will take precedence over the facial fractures.

The diagnosis of these fractures, as in the other types of facial fractures, can usually be made from the history and from the physical examination. A floating maxilla, if impacted, can be identified by the malocclusion of the teeth; if the maxilla is floating and not impacted, it can be moved on bimanual or intraoral examination. X-rays (Water's view) will confirm the physical findings.

The aim in repair of these fractures is as was mentioned earlier: to reduce the bones and hold them in a satisfactory position for good appearance and function.

Often, reduction of such fractures requires considerable time in the operating room. If the patient's general condition is satisfactory to withstand several hours of anesthesia and surgery, the repair can be done shortly after the injury is properly diagnosed. If there are other problems, it is advisable to suture the facial lacerations under local anesthesia. Ten to 14 days later, when the patient's general condition permits, reduction and realignment of the face can be undertaken as an elective operative procedure under general endotracheal anesthesia. If there is a sufficient number of teeth, after disimpacting the fractures, the dental occlusion is re-established and can be maintained using loop wires or an arch bar on the maxilla and mandible. Although there have been many approaches and devices to fix mid-face fractures, we

generally prefer the same type of approach used for the tri-malar fractures.

Incisions are made over the lines of fracture and loose bones are wired to intact bones higher on the face or even to the skull. The maxilla, having been placed so the teeth are in proper occlusion with those of the mandible, is then wired to the base of the skull attaching the wires to intact bones higher up on the face or skull and the lower ends to the dental arch bar or wires. Packing of the maxillary sinuses often is needed as is some type of support for the nose.

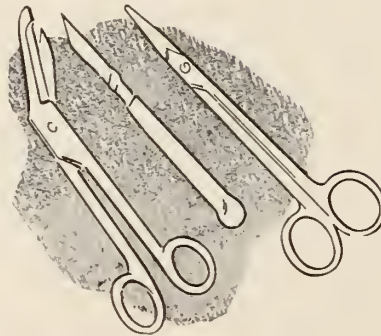
After the bones have healed satisfactorily, the wires are removed. Secondary reconstructive procedures are often indicated and

are performed weeks to months later as indicated.

It is extremely important in facial bone fractures that the treatment be exact but aggressive. If the fractures are not properly reduced and the bones repositioned before they become fixed, a satisfactory secondary result may not be possible.

If you are looking for an easy solution to face fractures—*Remember:*

- 1) The need for exact diagnosis.
- 2) Lack of urgency in treatment.
- 3) Lack of complicated external appliances.
- 4) Tendency to controlled, well-timed operative reductions and bony fixations.



BLUE CROSS-BLUE SHIELD OF ALABAMA

William H. Tucker, M. D., Mobile, Alabama

The Blue Cross organization was born in the depression. During the 1920's, hospitalization insurance was written on more or less an experimental basis. Surgery was considered insurable since there was a practical limitation to its application. Medical illnesses were considered uninsurable at that time and are still a great problem to the insurance industry. During the Great Depression of the 1930's, most hospitals, throughout the nation as well as Alabama, were near or actually in bankruptcy. The charity beds were filled to overflowing. The private beds were largely empty. In 1929, a group of school teachers in Dallas, Texas contracted with a hospital to supply them private room care in the event hospitalization was needed for fifty cents per month. This plan had such merit and was so attractive that the American Hospital Association developed the idea throughout the nation under the name Blue Cross. The term Blue Cross was invented to signify a non-profit hospital sponsored insurance plan that would pay in services rather than in money. Various hospitals and hospital groups united to form various "Blue Cross Plans." There are now approximately 76 plans throughout the U. S.

Dr. B. M. Carraway of Birmingham, Dr. A. C. Jackson of Jasper, Mr. Clyde L. Sibley, Administrator of the Baptist Hospital in Birmingham, Dr. D. S. Moore of Birmingham, and other Alabama hospital leaders made a study of the Dallas, Texas plan in 1936. Twelve hospitals formed a group that established the present Alabama plan. It was established by an act of the State Legislature. This act as amended from time to time constitutes the law under which this organization now functions as a non-profit corporation, under the control of the 128 member hospitals.

BLUE SHIELD

With the relative prosperity of the 1940 war years, the Blue Shield organization was developed to supply fees to physicians for performing surgical operations. Initially, Blue Shield policies were sold to substandard income groups. Since Blue Shield policies were originally to be sold only to those whose income was less than adequate, those physicians performing the surgery were asked to accept, as full payment for their services, the reduced fees paid by Blue Shield. This full payment schedule is known as a "Service" plan. Physicians have the choice of participation or non-participation in such service plans. In general, once a service plan is established, it is difficult for a physician to remain outside the plan. Under "Indemnity" coverage, the physician's fee is not related to what the insurance pays. This is in contrast to the "service" contract that obligates the physician to accept as full payment for his services the fee allowed by the insurance. Alabama is unique in that it is one of ten plans of the 70 U. S. Blue Shield plans that offer indemnity coverage only. It is even more unique in that it is one of four plans out of the 70 U. S. plans that has a combined Blue Cross-Blue Shield Board.

The Blue Cross-Blue Shield committee's report to the 1962 annual meeting of the Medical Association of the State of Alabama said as follows:

"Alabama is unusual in that Blue Cross and Blue Shield are jointly under the control of a Board of Directors consisting of 18 members. Physicians have only six out of the 18 positions. Realizing that decisions concerning professional matters should not be made by a board consisting of two-thirds nonprofessional members, the by-laws of

the corporation state in Section 7, Article 1, that 'in all matters pertaining solely to the practice of medicine under the Blue Shield plan in the State of Alabama, the six medical members of the Board of Trustees shall possess and exercise exclusive voting rights, privileges and powers'. In actual practice, it has been ruled by the legal counsel of the corporation that matters such as revising fee schedules do not come under this by-law and that all such decisions shall be made by the entire 18-member board. It therefore appears that Blue Shield is not, in the strictest sense, 'The Doctor Plan' in Alabama.

"All but 12 of the nation's 67 Blue Shield plans are governed by a majority of doctors of medicine, but even this is not a guarantee against attempts to take control away from physicians. A recent controversy in Rhode Island arose when the governor sponsored a bill to put public representatives in majority control on the Blue Shield Board of Directors. The physicians immediately pointed out that no Blue Shield plan had ever been saddled with a compulsory lay majority on its board. They threatened to cease to guarantee the services of the plan or to underwrite its risks. Under this threat the measure did not pass; and the physicians retained control of the plan in Rhode Island, at least until the next session of the Legislature. In Pennsylvania where the Blue Shield Board is composed entirely of physicians, the insurance commissioner has stated that 'Blue Shield is not the doctors plan, it belongs to the public'. He rejected proposals to upgrade the contract with increased benefits for certain surgical procedures and medical care in hospitals. He also turned down a proposal to pay more than one physician in instances where consultation required two doctors working on a single case."

During 1962 and 1963 a controversy has arisen in Michigan that was settled by a court order that in effect turns the Blue Shield over to the control of the insurance commissioner, leaving the doctors very little to say

about the type of policy to be written and fees to be paid. All plans that have become embroiled in controversy with public officials have been "service" plans.

"In 41 states, government officials have some say about Blue Shield contracts to subscribers. In 35 states Blue Shield must notify government officials of all intended premium rate increases. Twenty-four states have some control over Blue Shield fees to physicians. Only nine states—California, Colorado, Delaware, Maine, Missouri, Montana, Utah, Virginia, Wyoming and the District of Columbia—exercise little or no control over Blue Shield. A consultant to the National Association of Blue Shield Plans has stated that 'physicians should have a majority on the boards of these plans, otherwise their feeling of responsibility for Blue Shield's performance might suffer. They should not have an overwhelming majority,' he stated, 'but it would be wise to have representatives from all segments of the population.'

"The question as to what to do about Alabama and its combined Blue Cross-Blue Shield plan is not within the scope of this report. As long as there are no full-payment contracts in force in Alabama, the presently constituted arrangement with a minority of physicians serving on a combined Blue Cross-Blue Shield Board of Directors will probably continue. It should be pointed out that under this arrangement, the Medical Association of Alabama should not expect its six-man Blue Shield Committee to act in any capacity other than an advisory one with the responsibility to report important actions and problems to the Medical Association. If a full-payment service contract is ever contemplated for subscribers in Alabama, then the presently constituted directors could not adequately protect the interests of the physicians in Alabama, and definite changes should be unquestionably put into effect prior to any adoption of a full-payment service contract."

The Blue Cross-Blue Shield organization has grown into a dominating position in the

health insurance field. It constitutes the most important single economic factor in the nation's hospitals and to the medical profession in general. It can be expected that the future will hold even greater things for it.

Table I shows the increase in the number of people covered in Alabama from 1950 to 1963:

	Individuals Covered By Blue Cross	Population	Per Cent of Population Covered By Blue Cross
January 1, 1950	277,917	3,061,743	9%
January 1, 1952	428,610		
January 1, 1954	546,721		
* January 1, 1956	646,733		
January 1, 1958	699,068		
January 1, 1960	750,854	3,266,740	23%
January 1, 1962	836,287		
October 31, 1963	803,080	3,330,000 (est)	25% (est)

*Children coverage on family contracts to 16 years until mid 1956 and to age 19 thereafter.

Table II shows the gross billings by participating hospitals from 1950 to 1962 and the average charges to the Blue Cross subscribers for this period. During fiscal year 1963-64, approximately \$36,000,000 will have been taken in by Blue Cross-Blue Shield of Alabama.

Year	Gross Billings*	\$ Per Day**
1950	4,508,410.60	17.22
1952	6,813,263.30	19.51
1954	10,032,549.12	21.67
1956	13,881,254.26	23.49
1958	17,479,234.00	27.09
1960	22,490,185.00	30.67
1962	30,297,987.00	34.36

* Deduct 10 to 12 per cent from the gross billings to obtain the amount actually received by the hospitals from Blue Cross for care rendered.

**The same 10 to 12 per cent reduction would be necessary to obtain actual per diem reimbursement to hospitals for Blue Cross covered patients.

It is beyond the scope of this article to go into the cost reimbursement formula used by Blue Cross to determine what the hospital will receive for each Blue Cross covered

patient cared for. It will suffice to say, however, that the formula is a complicated one. It does not allow anything for bad debts, out-patient care, etc. Buildings are depreciated on a 50 year basis, etc. It is estimated that Blue Cross patients pay 10 to 12 per cent less than those having no insurance or those covered by non-Blue Cross insurance.

Who Controls Blue Cross-Blue Shield in Alabama?

Under the law passed by the legislature and revised from time to time, the Blue Cross-Blue Shield of Alabama is governed in the following manner. All licensed hospitals are approved for membership. The approving bodies for membership are the Alabama Hospital Association Board of Trustees and Board of Censors of the Medical Association of the State of Alabama. A hospital, if approved by these bodies, must be accepted by the Alabama Blue Cross. The reimbursement for a day of care for a Blue Cross covered patient is determined by an instructed audit which allows or disallows certain expenses of the hospital based on precedent and special factors too complicated to elaborate on in the scope of this article. Each member hospital may appoint one individual to act as a trustee on the Board of Trustees of the Alabama Blue Cross-Blue Shield. The Board of Trustees meets once each year. It meets one month following the annual meeting of the Alabama Hospital Association (usually in February). Table III gives an outline of the Board of Trustees:

Board of Trustees

128 Representatives—one for each Blue Cross member hospital in state.

PLUS

6 members representing the public.

PLUS

6 members nominated by M. A. S. A.

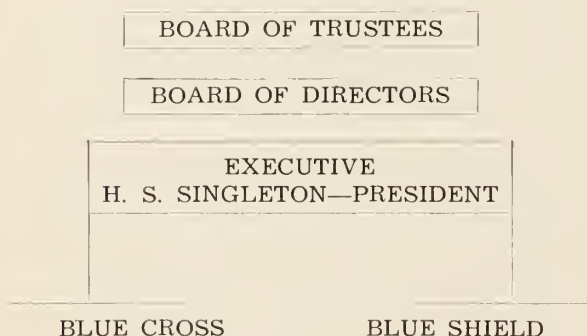
140—Total Membership

At its annual meeting in February, the Board of Trustees elects 10 new members to the Board of Directors in the following manner:

- 6 "Public" Members—Each to serve one year terms that may run successively for six consecutive one year terms.
- 2 Hospital Representatives to serve one three year term—may not succeed themselves after one year, may be re-elected (exception—Chairman of the Board may serve indefinitely).
- 2 Physicians—Representatives nominated by M. A. S. A.—Serve three year terms may not succeed themselves. After one year, may be re-elected.

This make a total of 18 member board.

A diagram of the organization is as shown in Table V.



Future of Blue Cross-Blue Shield

About 45 per cent of all hospital admissions in the urban areas are patients covered by Blue Cross. The over-all average for the State is somewhat less than this. The hospitals receive only "cost" for services rendered to Blue Cross patients. It has been estimated this "cost" is approximately seven to ten per cent less nation-wide of what the hospital would receive if the patient had no insurance or had another type of insurance. Governmental bodies traditionally do not pay enough to cover the cost of those receiving public assistance. Since the hospital has bad debts, greater depreciation than that allowed (two per cent per year for 50 years for a building), no allowance for out-patients services and no allowance for obsolescence of equipment, then it is obvious that the greater the percentage of admissions of Blue Cross patients then the greater the "mark up" for

the non-Blue Cross patient will have to be in order to make up for this deficit. If the growth of Blue Cross continues, private insurance will cease to be competitive due to the increased premiums brought about by increased charges to non-Blue Cross patients.

Future of Blue Shield

The national Blue Shield organization is dedicated to the principle of full-payment "service" plan. Continued pressure on indemnity plans, such as in Alabama, to change to the service type contract is brought to bear in many and varied ways. The most recent one was the "Senior Citizens" Contract overwhelmingly rejected by the State Association at its 1962 annual meeting. The Alabama plan management has taken the position that it will not encourage in any way a service type contract unless it is voted upon by a majority of the physicians in Alabama. Despite this fact, there are forces at play beyond the control of the present management and the physicians in Alabama that may create a situation whereby the Blue Cross-Blue Shield corporation may be forced into acting contrary to this established policy. For example: The U. S. Steelworkers who constitute the most powerful labor organization in Birmingham have been working to develop a full pay schedule for all its members under Blue Shield. For such reasons and others that may arise, it may be to the advantage of the corporation to adopt certain policies that would be contrary to the better interest of the general public and the medical profession. Great pressure can be brought by large blocks of subscribers. These acting in concert with the established policy of the national Blue Shield organization may be too great for management to resist. Under the existing Board organization, the Medical Association of the State of Alabama cannot expect its six member Blue Shield committee to act in any capacity other than an advisory one. If a full-payment service contract comes into being in one way or another, the presently constituted Directors representing the Medical Association cannot adequately protect the interest of the public.



Editorials

Crew-Cab Camper Used As Police Emergency Unit

The Underwater Recovery Service of the Missouri State Highway Patrol is equipped with a fast-moving unit that would be hard to match anywhere.

The Dodge W-200 pickup truck with four-wheel drive and 6-passenger Crew Cab is equipped with an 8,000-pound winch, two-way radio, public address system, police warning lights and siren, along with other general police and law enforcement equipment.

The camper unit can be used on or off the truck and is equipped with its own portable electric system. This system furnishes power for separate radio transmitting and receiving equipment, so that the camper unit can be used as an emergency field office.

In such instances there is thus maintained two-way radio contact between the camper emergency field office and the emergency Crew Cab.

Both of these radio systems are on the same frequency and are tied in with the Highway Patrol fixed radio stations and the radio equipment in other patrol cars.

One of the principal uses of the mobile unit is in the Underwater Recovery Service. Equipment includes a resuscitator and inhalator unit, air compressor for surface sup-

plied air, Scuba units, diving suits, general and underwater lighting equipment, and various tools and instruments for use in emergency and disaster situations.

The equipment was purchased and assembled by the Missouri State Highway Patrol, so that it would be capable of penetrating the remote places that are found in many areas of the state.

Patient Care To Be Discussed By Physicians-Nurses In San Francisco

"Joint Planning of Patient Care by Physicians and Nurses in the Hospital and Home" will be discussed in San Francisco June 24 during the 113th annual convention of the American Medical Association.

The 90-minute discussion, sponsored by AMA's Committee on Nursing, will be held in Room D of the Civic Auditorium as a part of the convention's scientific program.

Jeanne C. Quint, R. N., assistant research sociologist, University of California San Francisco Medical Center, will present to the nurse-physician audience a formal paper on the subject. Following the presentation a "reacting panel" will offer its views. Panel members include:

Jean Barrett, R. N., professor of nursing,

Yale University School of Nursing, New Haven, Conn.

Edmund D. Pellegrino, M. D., professor and chairman of the Department of Medicine, University of Kentucky Medical Center, Lexington, Kentucky.

Doris R. Schwartz, R. N., assistant professor of public health nursing, New York Hospital School of Nursing, Cornell University, New York.

George G. Reader, M. D., professor of medicine, New York Hospital, Cornell Medical Center, New York.

Concluding remarks will be made by Helen Nahm, R. N., Ph.D., San Francisco, the panel moderator, and Arthur A. Kirchner, M. D., Los Angeles, Chairman of the sponsoring Committee.

Additional information may be obtained by writing: Department of Nursing, American Medical Association, 535 North Dearborn Street, Chicago, Illinois 60610.

American Board Of Obstetrics And Gynecology

July 1st, 1964 is the final date for the receipt of new and reopened applications and requests for re-examination in the Board office.

All applications and letters of request must be accompanied by a duplicate list of patient dismissals for the preceding twelve months. This requirement also applies to those candidates who have previously been ruled eligible, but who did not accept examination in the same year.

Diplomates are requested to keep the Board office informed of their current address.

Clyde L. Randall, M. D., Secretary
American Board of Obstetrics
and Gynecology
100 Meadow Road
Buffalo, New York 14216

Promotion of Digestive Enzymes Termed 'Deplorable'

The promotion of nonprescription digestive enzymes for oral use is "deplorable," according to Philip L. White, Sc. D., secretary of the Council on Foods and Nutrition, American Medical Association.

Fanciful claims are made for these enzyme preparations but most, if not all, are either false or so exaggerated, they are meaningless, Dr. White wrote in the current (May) AMA-published Today's Health magazine.

There is no acceptable evidence that digestion is improved in the normal person by the use of supplementary enzymes, nor is there evidence that reduction of digestive capacity with age results in impaired digestion as claimed or implied in the sales promotion of these products, he added.

"Unless tissues which produce digestive enzymes are diseased or have been removed surgically, no purpose is served by the ingestion of oral digestive enzymes," Dr. White concluded. "The digestive capacity of the human being greatly exceeds the demands put upon it.

"This kind of promotion of nutritional products requires self-diagnosis and self-medication and is deplorable."

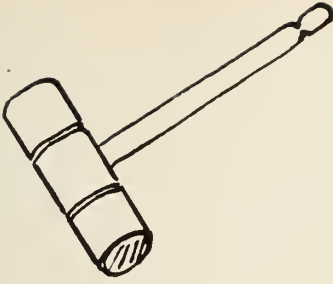
DIXIE POSTGRADUATE

ASSEMBLY

DAUPHIN ISLAND

MOBILE, ALABAMA

SEPTEMBER 24, 25 AND 26, 1964



President's Page



Committee appointments have been made and the functions of the Association are now underway for another year. It is no small task to make even the limited number of appointments that each President has and fit the man to the job or vice versa.

Some members are serving on as many as three very active committees. If they are conscientious, a lot of traveling must be done—as well as time consumed in being away from a busy practice. Others have been on committees for five years and only attended a meeting or two. The only information the appointing officer has to guide him are the attendance records of the committee meetings. The minutes now-a-days are fairly complete and show the attendance. At a recent meeting of the fifteen man Committee on

Public Relations, only eight members were present. A great deal seemed to have been accomplished, but some members had other commitments that would not let them attend at all during the year.

At one time it was thought that more members of the Association would become interested in the affairs of the organization if larger committees were appointed. It is true this did occur, but so much of the ground covered was repetitious and those who did participate felt their time was wasted, yet they dared not be absent. Appointments to several committees are being made and instructions are being sent for the committees not to meet; namely, the Finance and Annual Meeting Committees. The duties of these committees will be handled by the new

Board of Trustees. Since no provision has been made to delete these committees, they must show on the books. The Board of Trustees has an excellent group and it is hoped that the delegates at large can be elected by their own delegation later.

The Ordinances provide for five man committees and, in most instances, this number is sufficient to do the work. Recently one of the Committees requested that five members be added to a twelve man committee. These five new members were to be selected from specialty groups. It was found that by changing the position of one of the retiring members whose term had expired, remembering another member had a new office, and still another had requested to be relieved, three of the five new ones were absorbed. The fourth one then became an extra appointee and the chairman requested the fifth one be withheld until a later date.

Consultation with the chairmen of committees seems most important, as well as consultation with the appointees themselves. This year an acceptance or rejection is requested. All appointments, according to the Ordinances, are to be announced to the appointees by the Secretary within one month "of the Adjournment of the Annual Meeting."

In conclusion, it would seem best that all committee appointments be for one year and

that adherence to the five man committee provision in the Ordinance be accomplished. This could well be recommended by the Constitution and By-Laws Committee and passed at the same Annual Meeting since it would be an ordinance of the Association. Two things would result; first, a member who was effective on a committee could be re-appointed by the incoming president and an ineffective member could be dropped. Second, the expense of travel for only a five man committee would be a reduction over that for a larger committee.

It is expected that the new Board of Trustees, which is appointed for one year, will go into all these matters and make recommendations for furthering the efficiency of the operation of the Association's affairs. It is planned to have all the committees meet at least once before October to present a format for their own operation. In October, the committee chairmen can meet with the Board of Trustees and the Board of Censors and, if the latter so desires, hear reports from the committees. It is hoped that County Society Officers can meet then too.

E. B. Glenn, M. D.

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ASSOCIATION FORUM

AMERICA'S HEALTH-OURS TO PRESERVE

"The Greatest Blessing of Man"

Barbara Bugg



Homer, the blind poet of ancient Greece, when asked to name the greatest blessing of man, answered, "A sound mind in a manly body." Aristotle, Greek philosopher, believed that health is one of the major factors of happiness; Thomas Jefferson agreed with him and used Aristotle's "pursuit of happiness"¹ idea in the Declaration of Independence. All three men had in mind the same idea: health is vital to happiness. America's health must be preserved, for "happiness lies, first of all, in health."²

1. Aristotle's *Ethics*. "Theory of Happiness." *Encyclopedia Britannica* film. Humanities Course for Secondary Schools.

2. G. W. Curtis. *Lotus Eater*, quoted in *Home Book of Verse*, ed. by Burton Stevenson. (New York; Dodd, Mead and Co., 1958) p. 870.

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Americans have health standards that inspire citizens of other nations to yearn for the "greatest blessing of man" in the measure that we enjoy. Last summer a high school friend of mine spent several weeks studying Spanish at a college in Monterrey, Mexico. My friend and her companions, who were students from Alabama and Georgia, endured sieges of diarrhea during almost the entire time they were there. Health as we know it does not exist in Mexico. When I visited Europe in 1962, I was amazed at the difference in health conditions in those countries and health conditions in America. Presently, a group of students from my high school are enthusiastically planning to study in Spain at the University of Madrid for six weeks this coming summer, and I could join them if I wished. However, the glamour of living abroad left me disenchanted in 1962 when I saw unwrapped bread sold from hand-to-

hand and viewed the substandard conditions of the Portuguese *praca*, the local market place where goods for sale were displayed on the bare earth. In South America, children die constantly from lack of protein, a food abundant to all in our country; a United States-guided program to grow grain that inexpensively provides this nutritive lack is in progress; in Brazil, children have been fed four million school lunches (probably the only adequate daily meal) under the direction of the Alliance for Progress during the past two years. Thomas Mann, newly appointed Assistant Secretary of State for Inter-American Affairs, has stated that a proper atmosphere for the development of health standards is needed in South America as well as money. Providing life-sustaining protein is one thing; convincing people to use it is an even more difficult matter involving enlightenment and salesmanship.³

Lyndon B. Johnson, in an interview from his ranch a few weeks before he became President, debunked the "ugly American" idea and stated that wherever he had traveled in foreign countries, he felt that the people would gladly trade places with him; "top notch" health conditions in our country certainly influence this longing.⁴

An unselfish America that cares about the suffering of all people realizes that the population explosion demands improvement of health at home and over the world. The Ford Foundation, a private American enterprise, is planning to bring Calcutta, India, out of its filth to become one of the cleanest cities in the world. As a result, the citizens of Calcutta will have an opportunity to be free from the cholera, typhoid and tuberculosis that plague them now.⁵

"I have troubles of my own; don't tell me

yours" is a flippant saying that when applied to health Americans cannot accept. America's health standards inspire the world.

At home in America, a most magnificent program for the preservation of health was recently organized and operated by American physicians; it was, of course, the campaign for the prevention of poliomyelitis. The brilliance of the execution of this program, its speed, and its efficiency awed the American public and earned admiration for the medical profession. In addition as a public service, a Birmingham doctor, Dr. C. C. McLean, explained to the reading public through an article in the *Birmingham News* the reasons that the Sabin vaccine is superior to the Salk; his explanation that children vaccinated with the Salk vaccine could be carriers of poliomyelitis while children vaccinated with the Sabin vaccine could not is an example of the effort to educate the public which doctors frequently provide.⁷

Constantly in newspapers and magazines accounts of near-miraculous accomplishments mark medical history. Transplants of human and animal organs have indicated that such operations may be "everyday events" in the near future; astounding is the fact that one man from Louisiana received a chimpanzee's kidneys and is doing fine; and that another man accepted someone else's lung. (The man with the transplanted lung died, but the cause was chronic kidney disease, not the new lung.) Modern drugs are helping bodies to accept these tissues, but the dangerous disadvantage is that these drugs lessen the body's resistance to disease germs. Advanced techniques in surgery for congenitally malformed babies continue to push our country's health standards "to the sky" and gives many more babies a chance for a normal life.⁸ Is

3. "Can LBJ Help Latin America Solve its Problems?" *U. S. News and World Report*. LV (December 30, 1963) pp. 32-3.

4. Statement by Lyndon Johnson. Television interview. November, 1963. NBC.

5. Huntley-Brinkley Telecast. "Calcutta" December 26, 1963. NBC.

6. Upton Sinclair. "My Anti-Headache Diet." *Harpers* 227 (December, 1963) p. 41.

7. *Birmingham News*, December 5, 1963, Editorial page.

8. Lester David. "New Miracles of Baby Surgery." *Good Housekeeping* 156 (April, 1963) pp. 76-7.

not health the "greatest blessing of man"? Do not healthy, happy babies become healthy adults?

The American Medical Association is involved in a matter which may seem paradoxical to the undiscerning reader. The Association has condemned many cold cures and then turned around and fought the Food and Drug Administration to keep the cures on the market for the reason that the Food and Drug Administration should not have the right to dictate medical practice in this country. The Medical Association is thoroughly the *American Medical Association* when it guards our country against socialism and preserves our health and our freedom from unfair federal regulation."

"It is right for the government to see that its public needs are adequately met. It is not always necessary for the government—federal, state, or municipal—to do the job itself."¹⁰ The wisdom of the rejection of federal control of the medical profession and Medicare are obvious to those who understand the dangers of the welfare state.

To preserve the health attainments we have achieved and to continue to improve our methods, we must encourage more and more people to become doctors, nurses and other trained medical personnel. In my doctor's office, attractive pamphlets are available free that explain the qualities essential for a per-

son who wishes to become a doctor. At my high school, the Future Nurses Club is an active group that does volunteer work in a local hospital. The establishment of a Future Doctor's Club would be an excellent idea. It is certainly true that fine buildings do not make fine hospitals; only honorable, intelligent, highly trained people can do that.

America's health must be preserved and shared with the world. Health methods must advance and the citizens must be informed about them if Americans are to enjoy what Homer called the greatest blessing of man, "a sound mind in a healthy body."

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9. *Birmingham Post Herald*. November 12, 1963, p. 13. Article by John Troan, Scripps Howard science writer.

10. *Reader's Digest* 83 (November, 1963), p. 90.



around the state

Candid Camera at the Eli Lilly Road Show



Dr. Robert Schramel, New Orleans, Louisiana.



Dr. Fred M. Hunter, third from right, talks with Black Belt members.



Scenes at the dinner party.



A lovely day for lovely ladies.



Dr. Overstreet—It was a hard day!



Mrs. Doris Pilkington at registration desk.



Mrs. Joyce Fisher, Executive Director,
Alabama Chapter, AAGP

The Woman's Auxiliary

Dr. J. G. Daves, Immediate Past-President
Medical Association of the State of Alabama
Cullman, Alabama

Dear Dr. Daves:

Certainly you are due an apology from me for not attending all the sessions in Montgomery. Frances was installed as President of the State Medical Auxiliary, so I went to Montgomery pledged to her. For the past 25 years she has jumped everytime I said "jump" and has been obedient most of the time. After much consideration and possibly some prayer, I decided that I could forego my own questionable pleasures and put myself at her disposal for this one particular meeting. I am sure you have occasionally attended Auxiliary meetings but I doubt if you have spent as much time with these fine ladies as I did. There are a few things which stand out in my memory.

They have so many annual reports. These gals report on practically everything, AMA-ERF, membership drives, uncivil rights, collection of samples from doctors' offices, public relations, and husband behavior.

I enjoyed the luncheon at the Country Club with a style show afterwards. Never before did I realize that doctors have such good taste in women. The watchers and watched were all doctors' wives and acted very professional. I always thought style shows eventually got down to nighties and undies along with bathing suits but apparently my presence changed some of the show. All were fully dressed. I did learn that "empire" is pronounced "ompeer" and has something to do with whether the waistline is above or below the navel. I was also amused that one of the dresses had a built-in "Dickey." As to what that is, your guess is as good as mine! All were lovely, the younger ones were real cute but the more mature models with a little

"heft" to them appealed to me more.

The "Sherry Party" before the Friday luncheon was just right. I have always felt that this is pretty sterile entertainment; "Old Fashioneds" give you more fireworks. It was just like any other party. Everything started out quiet and subdued but after two or three snorts everything was noisy and rolling.

The business session was not unlike ours except we are somewhat genteel by comparison. These gals don't beat around the bush. The Parliamentarian is frequently called upon to give immediate opinions and reminded me of the great Alabama politician who, when pinned down concerning his attitude toward liquor, said, "Some of my friends drink and some of my friends are against liquor. I stand on the side of my friends." A female parliamentarian not only must know "Robert's Rules of Order" but must be able to say, "I think both sides are right, but today we will do it this way." She was magnificent and as far I know, nobody got mad.

Next to their attractiveness, the thing that impressed me most was their intelligence. The doctors of Alabama are married to a group of sure-enough smart women who know how to wheel and deal. Through the years I have, as you probably have, wondered what it would be like to have a harem. As I get older, I wonder less. Even more than that, I don't think I would want one. Just from looking and listening I was exhausted, but I still like girls better than I do boys. I think next year at the convention, since you will not have the responsibilities that you have had previously, it might be interesting for you and me both to attend the Auxiliary meeting.

Please forgive me for my apparent change of interest in medicine.

Yours truly,

Lowell H. Clemmons, M. D.



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